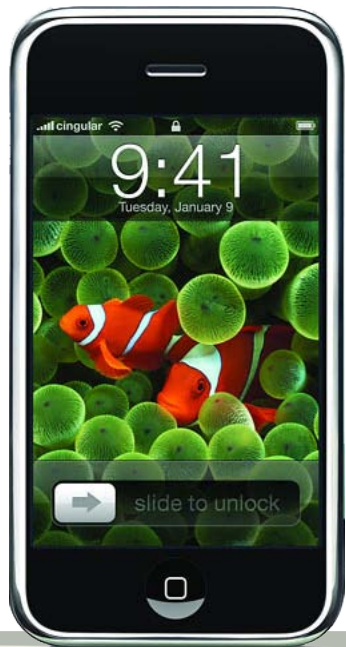




کتاب راهنمای تعمیرات گوشیهای آیفون فارسی



رایگان



iphone



iphone 3G



iphone 3GS



iphone 4



پاناتل هشت ساله شد

هشت سالگی پاناتل را امروز به جشن می نشینیم و این کتاب به رسم یادبود این سالها تقدیم به تک تک شما عزیزان می گردد.

این کتاب بصورت رایگان در اختیار شما عزیزان قرار می گیرد و در دو بخش IPHONE و HTC می باشد. البته لازم به ذکر است که اطلاعات مربوط به گوشی های HTC بصورت سرویس منوال می باشد و کتاب حاضر در دست شما بخش آیفون می باشد. با مصادف شدن پایان اجرای کتاب با هشتمین سالگرد تأسیس پاناتل خالی از لطف ندیدم که این کتاب را به عنوان هدیه به جامعه تعمیرکاران به رسم یادبود تقدیم کنم ، و درست بودن تصمیم زمانی برایم روشنتر شد که با سیل تماسها و SMS های ارسالی شما از زمان اعلام رایگان بودن کتاب مواجه شدم .

فقط جای بسی تعجب هم بود که برخی از دوستان برایشان سؤال بود که چرا باید همچنین کتابی بصورت رایگان ارائه شود ، در جواب آندسته از عزیزان باید به عرض برسانم که این اولین محصول رایگان ارائه شده از طرف پاناتل نیست و تابحال شاهد محصولات رایگان از پاناتل مثل کلاس های رایگان نقشه خوانی ، نرم افزار رایگان و هم اکنون کتاب رایگان بوده ایم ، پس جای تعجبی ندارد، در حالیکه هر کدام از این محصولات سختی ها و هزینه های خاص خودشان را داشته اند و تمامی عزیزانی که بنده را از نزدیک می شناسند بهتر می دانند که مادیات در درجه دوم اهمیت برای من قرار دارد و هدف من از روز اول سعی در گسترش واشاعه فرهنگ استفاده از نقشه در تعمیرات موبایل بوده و هست و خوشحالم تا حد زیادی امروز به این هدف دست پیدا کرده ام و برای نتیجه بهتر بازهم تلاش خواهم کرد.

این کتاب به سه صورت تهیه شده است.

- ۱- **نسخه چاپی رایگان فقط برای پاناتلی های عزیز:** (بصورت پوستر ۷۰*۱۰۰ شامل شماتیک کامل IPHONE4 و 3GS) که فقط برای عزیزانی که از دفتر مرکزی پاناتل خرید کرده اند به پاس قدردانی از همراهی همیشگی آنها از پاناتل رایگان در اختیارشان قرار خواهد گرفت و تهیه آن برای سایرین با هزینه ای اندک (مبلغ چهار هزار تومان) میسر می باشد.
 - ۲- **در قالب یک CD** شامل کتاب آیفون بصورت PDF ، اطلاعات فنی آی سی های استفاده شده در گوشی بصورت PDF ، ویدیوهای مربوط به باز و بسته کردن گوشی های آیفون و سرویس منوال های HTC می باشد و کل این مجموعه برای کاربران پاناتل رایگان و برای سایرین با قیمت پنج هزار تومان قابل تهیه می باشد.
 - ۳- **نسخه کاملاً رایگان** ، نسخه کاملاً رایگان کتاب آیفون با فرمت PDF قابل تهیه از طریق سایت پاناتل ، این نسخه فقط شامل کتاب آیفون بصورت PDF بوده و با نسخه های ارائه شده در CD و یا چاپی فرقی نخواهد داشت فقط بدلیل دانلود راحتتر از اینترنت بصورت سبک تری درآمده و فاقد ویدیوهای آموزشی و یا اطلاعات کامل آی سی ها خواهد بود، بر کسی پوشیده نیست که امروز همگان میل استفاده از نقشه بصورت PDF دارند و ما نیز این گزینه را بهترین راه برای ارائه چنین کتابی دانستیم امید است مورد استفاده قرار گیرد.
- اما در مورد شماتیک های آیفون نکات نیست که می بایست به عرض برسانم .اول اینکه نخستین بار است که شماتیک های آیفون در یک کتاب بصورت منسجم و با کیفیت بالا گنجانده شده است، بطور مثال نقشه آیفون 3GS قابل دسترسی در اینترنت، بصورت یک فایل اسکن شده و فاقد امکان جستجو و با اشتباهات بسیاری در نام گذاری آی سی ها می باشد ، اما در این محصول (کتاب پاناتل) می بینیم که نقشه با کیفیت بسیار بالایی اجرا شده و قابلیت جستجو را نیز دارا می باشد که در نوع خود بی نظیر است همانند سایر محصولات پاناتل که در زمان انتشار خود برای اولین بار همیشه جزء اولین منابع نقشه بوده اند و هستند مثل کتاب سامسونگ 2C و 2D که هنوز هم نقشه ها یشان در هیچ سایت اینترنتی قابل دسترسی نیست .
- مطلب دوم اینکه Component Placing گوشی های iPhone 4 و iPhone 3G تا به امروز در دسترس نبوده اند ، ولی خبر خوب اینکه قسمت اعظمی از قطعات توسط پاناتل در این دو گوشی شماره گذاری شده اند و نیز در هر گوشی توضیحاتی مبنی بر اینکه چگونه می توان قطعات را بدست آورد، ارائه شده است در ضمن اجرای کامل Component Placing این گوشی ها توسط پاناتل در دست تهیه می باشد و به محض آماده شدن پخش خواهد شد .
- این کتاب فقط شامل نقشه گوشی های آیفون می باشد و بخش سرویس منوال های HTC را می توانید از سایت پاناتل به راحتی دریافت نمایید .

معراج قنات مرداد ۱۳۹۰

منتظر نظرات ، انتقادات و پیشنهادات سازنده شما از طریق راههای زیر می باشم .

از طریق ارسال SMS به شماره ۲۰۰۰۹۵۴۳

تماس تلفنی با شماره های ۰۲۱۶۶۷۴۶۰۹۱ و ۰۲۱۶۶۷۴۶۰۷۹

از طریق ارسال ایمیل به آدرس info@panatel.org

و یا ارتباط از طریق مسنجر با آیدی panatelorg@yahoo.com



IPHON

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مشخصات کلی	معرفی	ژوئن ۲۰۱۰
	باند فرکانس	GSM 850 / 900 / 1800 / 1900
	ابعاد	۱۱۵.۲×۵۸.۶×۹.۳ میلی‌متر
پیکربندی	وزن	۱۳۷ گرم
	شکل ظاهری	ساده
	رنگ	مشکی/سفید
	نوع	TFT touchscreen با صفحه لمسی خازنی
صفحه نمایش	تعداد رنگ	۱۶ میلیون رنگ
	وضوح	۱۶۰×۷۴۰ پیکسل
	ابعاد	۳.۵ اینچ
	نوع رنگ	MP3
رنگ	دریافت رنگ	بله
	لرز آنده	بله
	دفترچه تلفن	تقریباً نامحدود برای شماره و مشخصه به همراه تصویر تماس گیرنده
	گزارش تماس‌ها	۱۰-تماس گرفته شده، تماس دریافت شده، تماس از دست رفته
حافظه	حافظه داخلی	۱۶ کیگابایت یا ۳۲ کیگابایت
	پشتیبانی کارت حافظه	خیر
	کارت حافظه همراه	خیر
	بلوتوث	بله نسخه ۲.۱ با قابلیت ارسال همزمان داده‌ها (TOOTH STEREO)
	مادون قرمز	خیر
	USB	بله، نسخه ۲
	انطباق با کامپیوتر	بله
	پیام	SMS (threaded view), MMS, Email, Push Email
	مرورگر اینترنت	HTML (Safari)
تبادل اطلاعات	شبکه بیسیم	Wi-Fi 802.11 b/g/n
	چاپ مستقیم	خیر
	GPRS	Class 10 (4+1/3+2 slots), 32 - 48 kbps
	EDGE	Class 10, 236.8 kbps
	G۳	HSDPA 7.2 Mbps, HSUPA 5.76 Mbps
	PUSH TO TALK	خیر
	PNP	بله
	GPS	A-GPS support/بله
	کیفیت عکس	۵ مگاپیکسل
	ابعاد عکس	۲۵۹۲×۱۹۴۴ پیکسل
	بزرگ‌نمایی	بله
	فلاش	LED flash/ LED video light
	فیلمبرداری	بله
دوربین	مدت فیلمبرداری	به میزان حافظه
	ابعاد فیلم	۷۲۰ پیکسل، حداکثر ۳۰ فریم در ثانیه
	فوکوس خودکار	بله
	دوربین دوم	بله
	تماس تصویری	بله
	سیستم عامل	iOS 4 (based on Mac OS)
	CPU	Apple A4 processor
ویژگی‌ها	صفحه کلید کامل (QWERTY)	بله (virtual QWERTY)
	پخش فیلم	بله
	پخش موسیقی	بله



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رادیو	بله
کار با پرونده های آفیس	بله
کار با پرونده های پی دی اف	بله
کار با پرونده های زیپ	بله
پخش با صدای بلند	بله
پایه خروجی صدا	۳.۵ mm audio jack
ساعت	بله
زنگ هشدار	بله
جاوا	خیر
بازی	بله با ساپورت بازی های حرکتی
نصب بازی	بله
پیش بینی کلمه	T9
شماره گیری صوتی	بله
ضبط صدا	بله
خروجی تلویزیون	بله
مدیریت اطلاعات شخصی	تقویم / دفترچه تلفن / یادداشت/وظایف/آئی/ماشین حساب و ...
ویرایش فیلم	بله
سنسور حرکتی	حسگر شتاب سنچ برای چرخش اتوماتیک صفحه نمایش / Proximity sensor for auto turn-off
مشخصات ویژه این مدل	صفحه نمایش ضد خش/نویزگیر صدا با میکروفن مجزا/پنل پشت گوشی از جنس شیشه ضدخش/فوکوس لمسی/geo-tagging/Multi-touch input method/Three-axis sensor/Google Maps/iBooks application gyro
نوع	باتری استاندارد Li-Ion
مکالمه	حداکثر ۱۴ ساعت
تنتظر	حداکثر ۳۰۰ ساعت

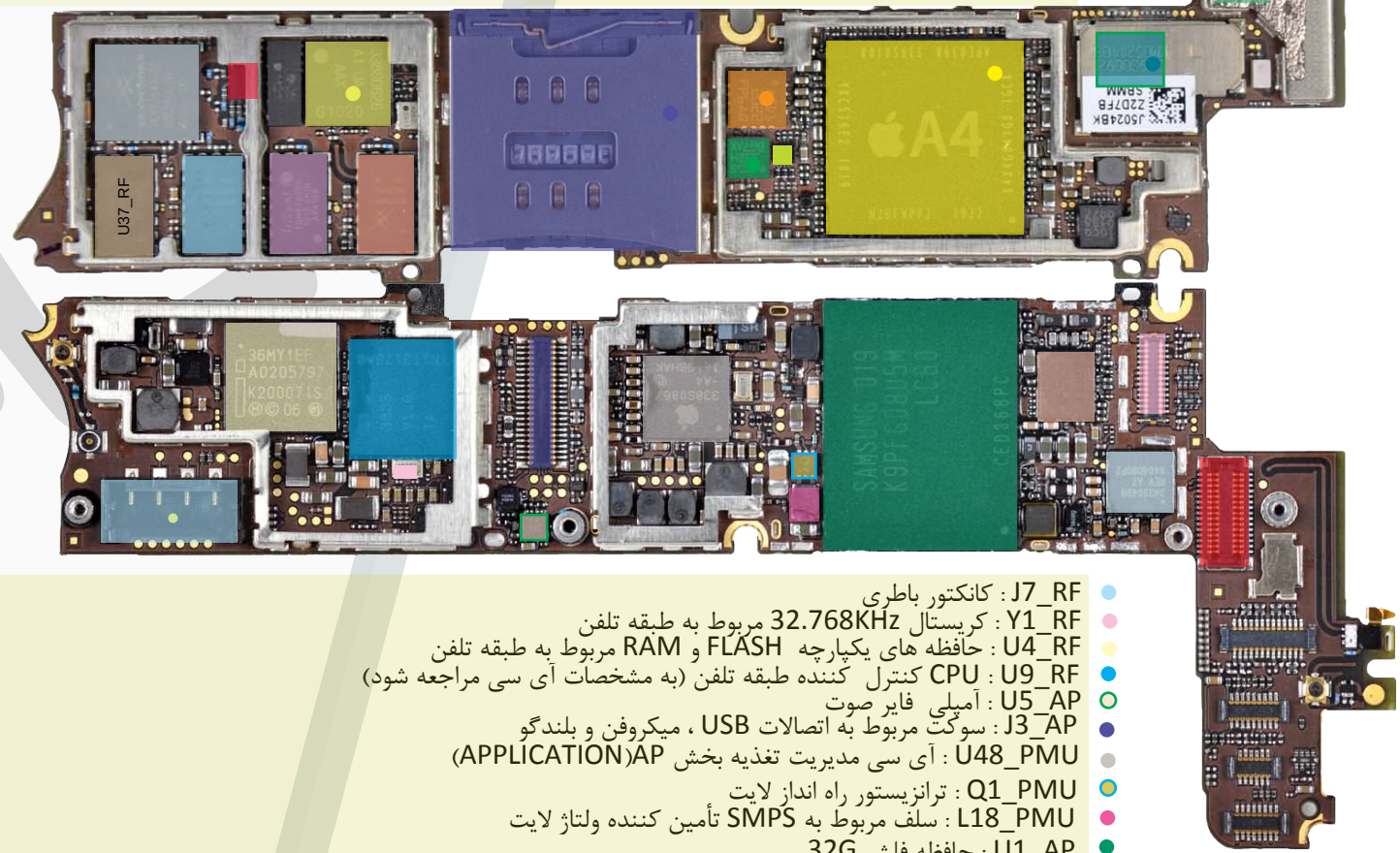


IPHONE

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- U1_RF : آمپلی فایر مربوط به طبقه فرستنده بخش GSM
- U37_RF : تقویت کننده رادیویی (باند ۲) مربوط به بخش WCDMA و HSUPA
- U5_RF : تقویت کننده رادیویی (باند ۶و۵) مربوط به بخش WCDMA و HSUPA
- U19_RF : تقویت کننده رادیویی (باند ۱) مربوط به بخش WCDMA و HSUPA
- U20_RF : تقویت کننده رادیویی (باند ۸) مربوط به بخش WCDMA و HSUPA
- U8_RF : آی سی RFSP (پردازشگر طبقه رادیویی) ساخت کمپانی INFINEON که مدیریت طبقه رادیویی را برعهده دارد
- U6_RF : تقویت کننده LNA مربوط به بخش RX طبقات WCDMA و HSUPA
- J2_AP : سوکت سیم کارت
- U3_AP : سنسور شتاب به منظور تشخیص جابجایی گوشی
- U16_AP : GYRO یاژیروسکوپ برای تشخیص جابجایی گوشی
- U9_AP : تقویت کننده تصویر مربوط به اتصال کابل AV
- U52_AP : پردازشگر و کنترل کننده طبقه APPLICATION
- U2_RF : ماژول WLAN ، بلوتوس و رادیو FM
- U14_RF : ماژول GPS

● برای بدست آوردن اطلاعات بیشتر توصیه می شود به اطلاعات فنی آی سی ها در انتها مراجعه شود ●



- J7_RF : کانکتور باتری
- Y1_RF : کریستال 32.768KHz مربوط به طبقه تلفن
- U4_RF : حافظه های یکپارچه FLASH و RAM مربوط به طبقه تلفن
- U9_RF : CPU کنترل کننده طبقه تلفن (به مشخصات آی سی مراجعه شود)
- U5_AP : آمپلی فایر صوت
- J3_AP : سوکت مربوط به اتصالات USB ، میکروفن و بلندگو
- U48_PMU : آی سی مدیریت تغذیه بخش AP (APPLICATION)
- Q1_PMU : ترانزیستور راه انداز لایت
- L18_PMU : سلف مربوط به SMPS تأمین کننده ولتاژ لایت
- U1_AP : حافظه فلش 32G
- U60_AP : آی سی کنترل و مدیریت صوت
- U19_AP : آی سی کنترل کننده صفحه لمسی
- J5_AP : کانکتور صفحه لمسی
- J6_AP : کانکتور دوربین

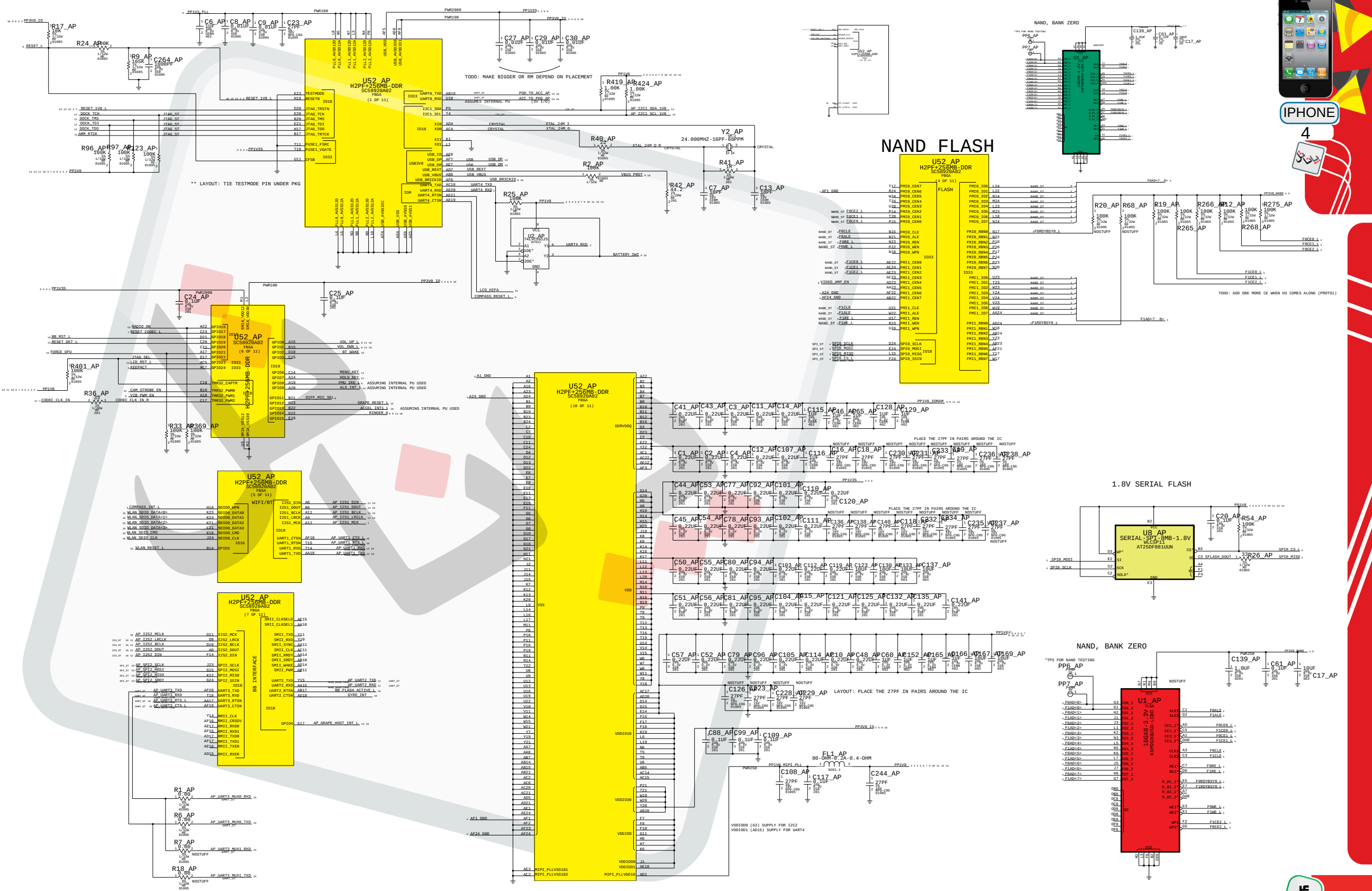


IPHONE 4

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NAND FLASH

1.8V SERIAL FLASH

NAND, BANK ZERO

TODD: MAKE BIGGER OR RM DEPEND ON PLACEMENT

TODD: ADD ONE MORE CE WHEN H3 COMES ALONG (PROT01)

LAYOUT: PLACE THE 27PF IN PAIRS AROUND THE IC

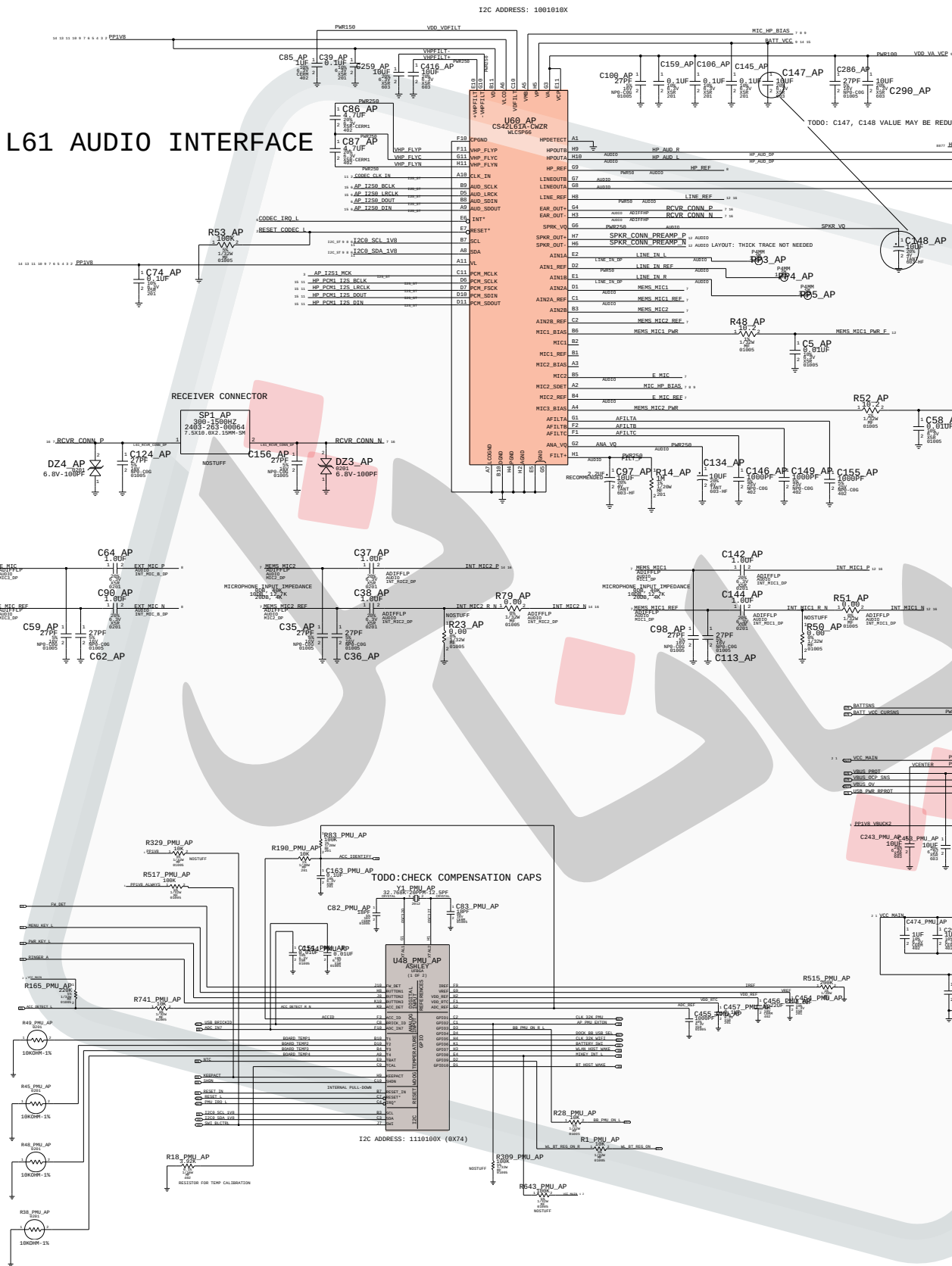
LAYOUT: PLACE THE 27PF IN PAIRS AROUND THE IC

80-0HM-0.2A-0.4-OHM

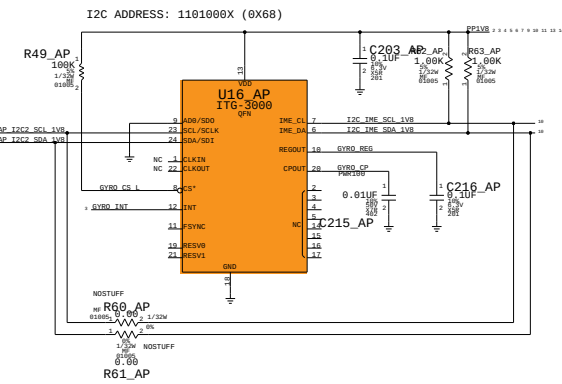
V001000 (G3) SUPPLY FOR I2C2

V001001 (A015) SUPPLY FOR UART4

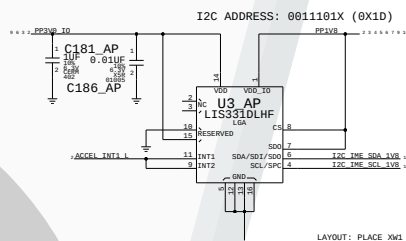
L61 AUDIO INTERFACE



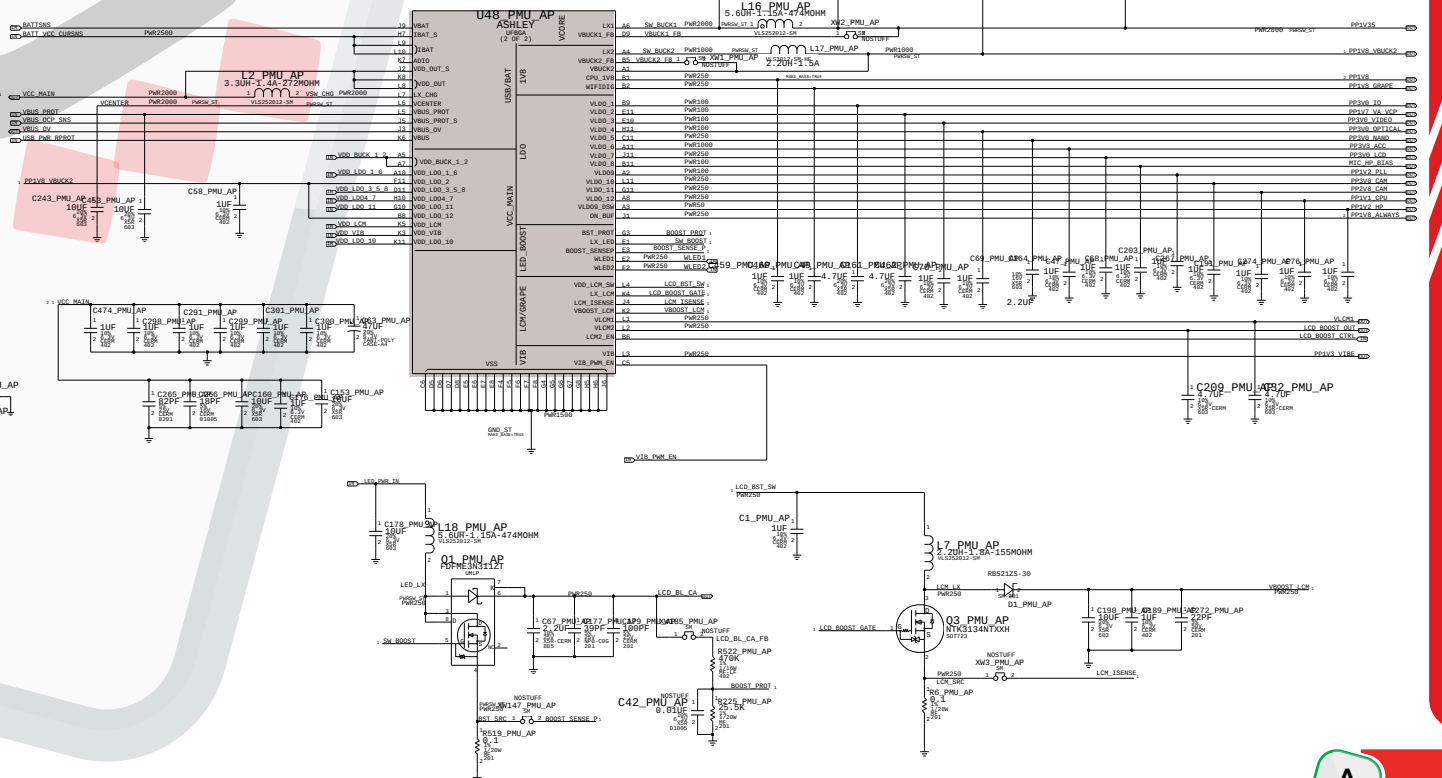
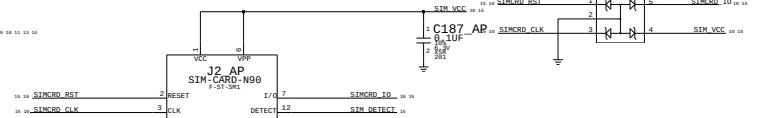
GYRO



ACCELEROMETER



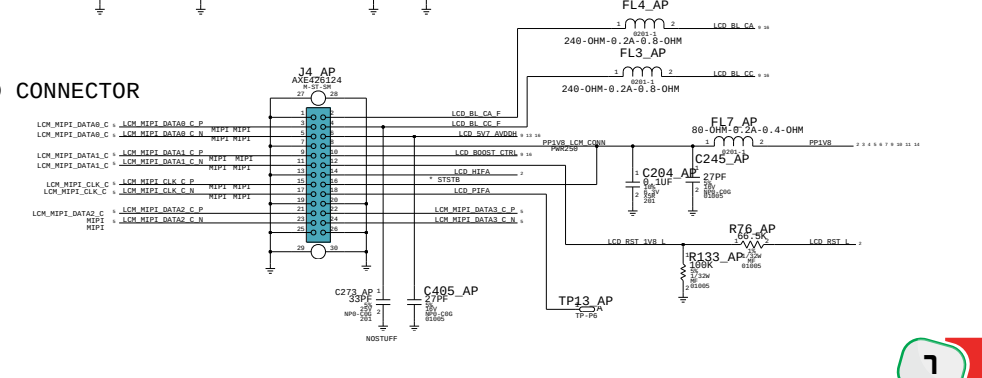
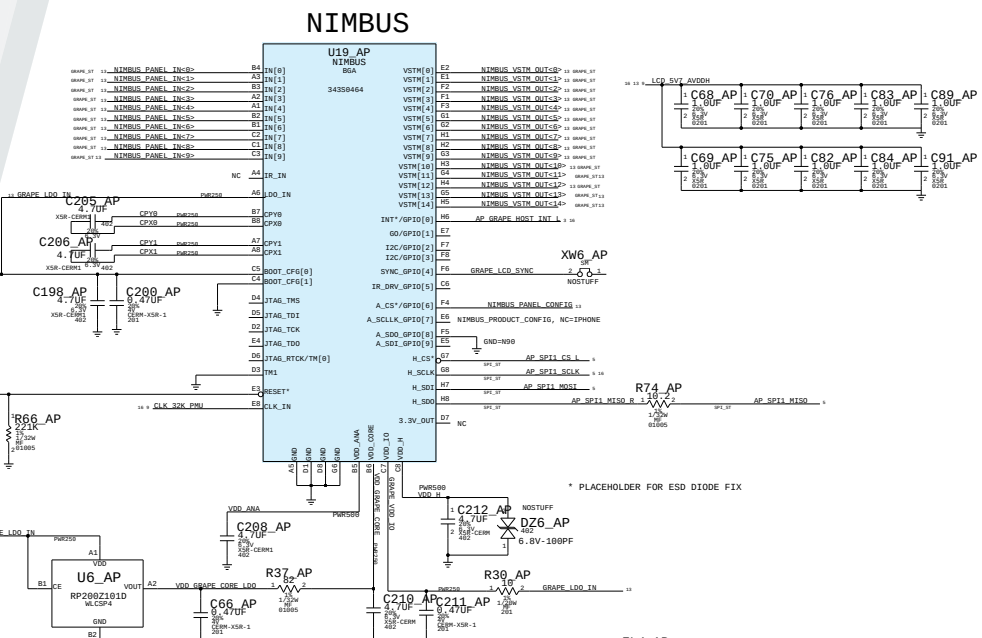
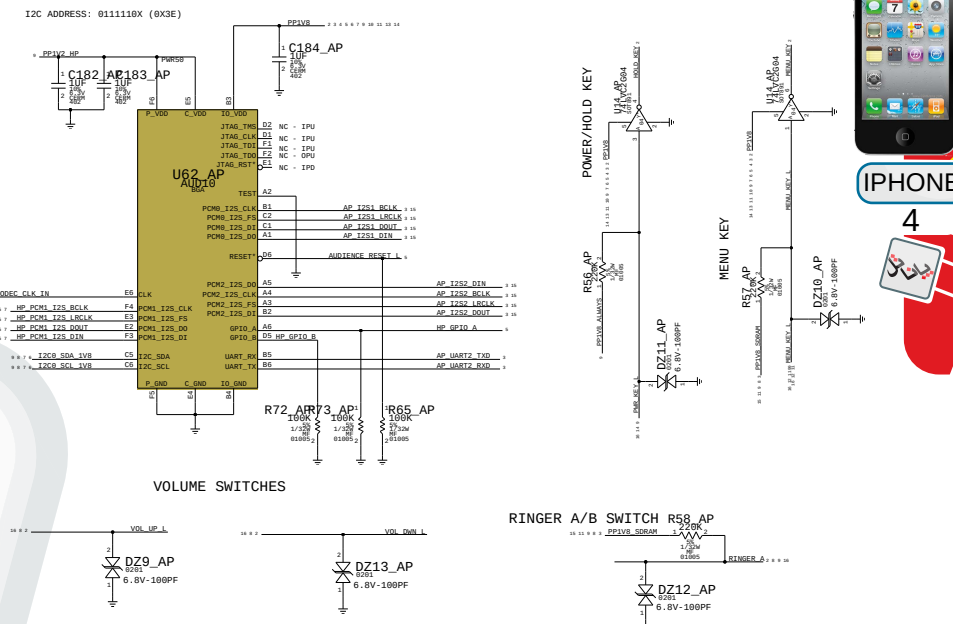
SIM CARD



IPHONE

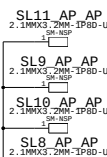
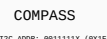
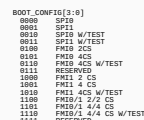
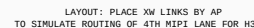
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△





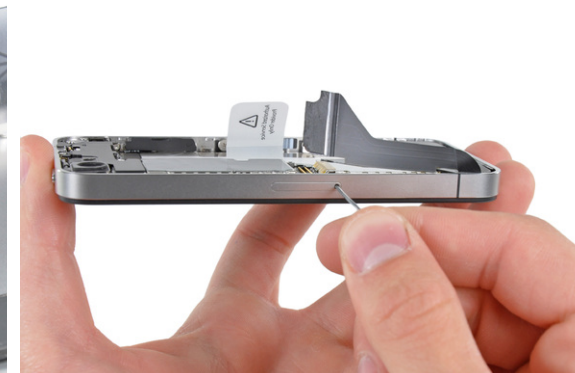
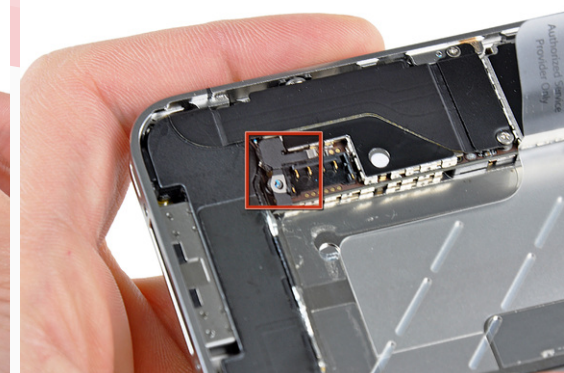
IPHONE

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شما تیک های مربوط به طبقه تلفن ▶

تصاویر مربوط به باز کردن آیفون 4G

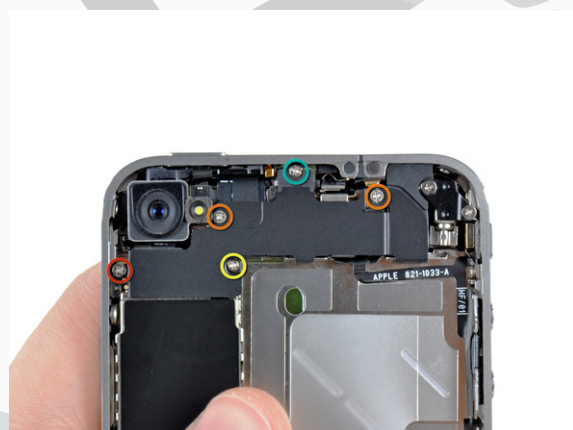
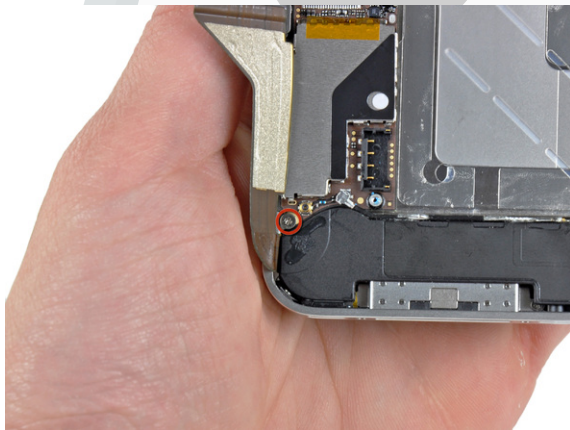
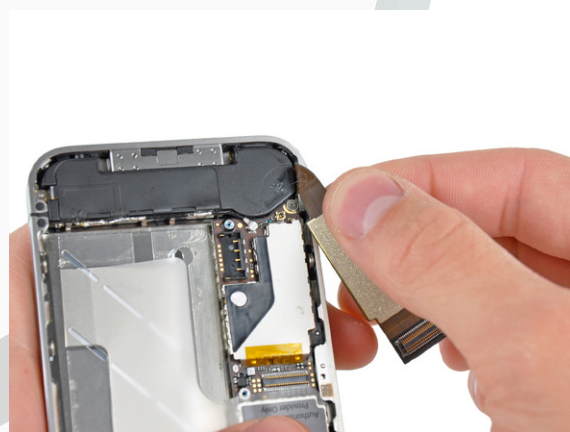


IPHONE

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تصاویر مربوط به باز کردن آیفون 4G



IPHONE

4

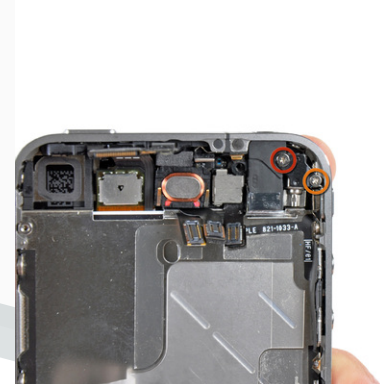


تصاویر مربوط به باز کردن آیفون 4G



IPHONE

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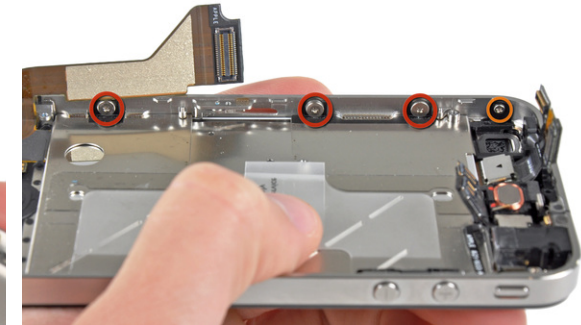


تصاویر مربوط به باز کردن آیفون 4G



IPHONE

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اطلاعات فنی مربوط به برخی از آی سی های بکار رفته در آیفون 4G

SN74LVC2G125-Q1

DUAL BUS BUFFER GATE
WITH 3-STATE OUTPUTS

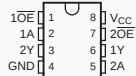


FEATURES

- Qualified for Automotive Applications
- Supports 5-V V_{CC} Operation
- Inputs Accept Voltages to 5.5 V
- Max t_{pd} of 4.3 ns at 3.3 V
- Low Power Consumption, 10- μ A Max I_{CC}
- ± 24 -mA Output Drive at 3.3 V
- Typical V_{OLP} (Output Ground Bounce) < 0.8 V at $V_{CC} = 3.3$ V, $T_A = 25^\circ\text{C}$
- Typical V_{OHV} (Output V_{OH} Undershoot) > 2 V at $V_{CC} = 3.3$ V, $T_A = 25^\circ\text{C}$
- I_{LH} Supports Partial-Power-Down Mode Operation
- Latch-Up Performance Exceeds 100 mA Per JESD 78, Class II

- ESD Protection Exceeds JESD 22
 - 2000-V Human-Body Model (A114-A)
 - 200-V Machine Model (A115-A)
 - 1000-V Charged-Device Model (C101)

DCT OR DCU PACKAGE
(TOP VIEW)



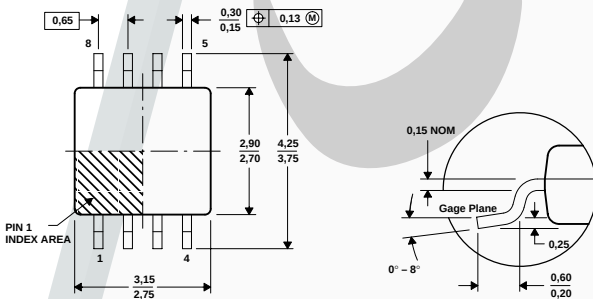
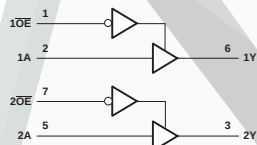
DESCRIPTION/ORDERING INFORMATION

The SN74LVC2G125-Q1 is a dual bus buffer gate designed for 1.65-V to 5.5-V V_{CC} operation. This device features dual line drivers with 3-state outputs. The outputs are disabled when the associated output-enable ($\overline{OE}$) input is high.

To ensure the high-impedance state during power up or power down, $\overline{OE}$ should be tied to V_{CC} through a pullup resistor; the minimum value of the resistor is determined by the current-sinking capability of the driver.

This device is fully specified for partial-power-down applications using I_{LH} . The I_{LH} circuitry disables the outputs, preventing damaging current backflow through the device when it is powered down.

LOGIC DIAGRAM (POSITIVE LOGIC)



AK8973

3-axis Electronic Compass



1. Features

- 3-axis electronic compass IC
- Optimal built-in electronic compass for mobile phones and handy terminals
- High sensitivity Hall sensors are integrated.
- Functions
 - Built-in 8-bit ADC
 - Built-in amplifier for sensor signal amplification
 - Built-in 8-bit DAC for sensor signal offset compensation
 - Built-in EEPROM for storing individual adjustment values
 - Built-in temperature sensor
 - 8-bit digital output
 - Serial interface: I²C bus interface (supporting the low-voltage specification)
 - Automatic power-down function
 - Interrupt function for measurement data ready
 - Built-in master clock oscillator
- Operating temperatures: -30°C to $+85^\circ\text{C}$
- Operating supply voltage: $+2.5\text{V}$ to $+3.6\text{V}$
- Low current consumption/measurement time:
 - Power-down: $0.2\mu\text{A}$ typ.
 - Magnetic sensor driving: $6.8\text{mA}/12.6\text{ms}$
- Package: 16-pin QFN package: $4.0\text{mm} \times 4.0\text{mm} \times 0.7\text{mm}$

2. Overview

AK8973 is a geomagnetism detection type electronic compass IC.

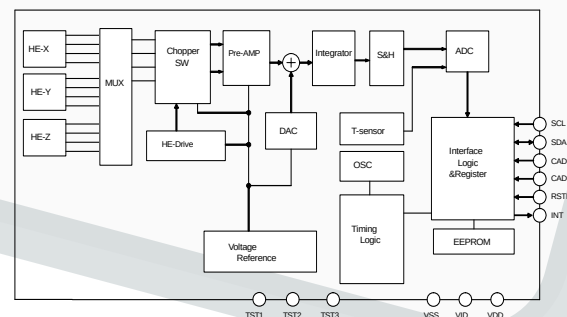
The small package of AK8973 integrates magnetic sensors for detecting geomagnetism in the X-axis, Y-axis, and Z-axis, and arithmetic circuit for processing the signal from each sensor. AK8973 outputs four data in total as 8-bit digital values respectively: 3-axis magnetic sensor measured values and temperature sensor read value. By processing the magnetic sensor measured values with an external CPU, azimuth data can be obtained.

By using AK8973 integrated into the system, a navigation system is achieved with reduced space in portable equipment such as PDA or mobile phone incorporating the GPS function.

Specifically, AK8973 has the following features:

- (1) Due to the built-in 8-bit ADC and serial interface, geomagnetism of the X-axis, Y-axis, and Z-axis can be detected as digital data.
- (2) The serial interface corresponds to the I²C bus.
- (3) A dedicated power supply is used for the serial interface, so the low-voltage specification can also be supported by applying 1.85V.
- (4) Due to the built-in DAC for compensating the offset magnetic field, the position restraint with parts which generate the offset magnetic field such as speakers is reduced, and the degree of freedom about layout is expanded. Note 1)
- (5) An EEPROM for storing the individual adjustment values of sensor sensitivity is built-in. The adjustment values are stored in factory at the time of shipment from AKM.
- (6) The built-in temperature sensor as an accessory generates the 8-bit digital A/D-converted value. The temperature information is not used for azimuth calculation.
- (7) The major circuit blocks of AK8973 are activated by the measurement request command from the controller, and transit to the power-down mode automatically at the end of measurement. That characteristic realizes the low power consumption required for mobile phones.
- (8) The interrupt function for posting the completion of sensor signal measurement to the external CPU is built-in.
- (9) The master clock oscillator is built-in. It is unnecessary to supply the clock from the outside.

3.1. Block Diagram



AT25DF081

8-megabit
1.65-volt
Minimum
SPI Serial Flash
Memory



Features

- Single 1.65V - 1.95V Supply
- Serial Peripheral Interface (SPI) Compatible
 - Supports SPI Modes 0 and 3
- 66 MHz Maximum Clock Frequency
- Flexible, Uniform Erase Architecture
 - 4-Kbyte Blocks
 - 32-Kbyte Blocks
 - 64-Kbyte Blocks
 - Full Chip Erase
- Individual Sector Protection with Global Protect/Unprotect Feature
 - Sixteen 64-Kbyte Physical Sectors
- Hardware Controlled Locking of Protected Sectors
- Flexible Programming
 - Byte/Page Program (1 to 256 Bytes)
- Automatic Checking and Reporting of Erase/Program Failures
- JEDEC Standard Manufacturer and Device ID Read Methodology
- Low Power Dissipation
 - 7 mA Active Read Current (Typical)
 - 8 μA Deep Power-Down Current (Typical)
- Endurance: 100,000 Program/Erase Cycles
- Data Retention: 20 Years
- Complies with Full Industrial Temperature Range
- Industry Standard Green (Pb/Halide-free/RoHS Compliant) Package Options
 - 8-lead SOIC (150-mil wide)
 - 8-contact Ultra Thin DFN (5 mm x 6 mm x 0.6 mm)
 - 11-ball dBG (WLCSF)

1. Description

The AT25DF081 is a serial interface Flash memory device designed for use in a wide variety of high-volume consumer based applications in which program code is shadowed from Flash memory into embedded or external RAM for execution. The flexible erase architecture of the AT25DF081, with its erase granularity as small as 4-Kbytes, makes it ideal for data storage as well, eliminating the need for additional data storage EEPROM devices.

The physical sectoring and the erase block sizes of the AT25DF081 have been optimized to meet the needs of today's code and data storage applications. By optimizing the size of the physical sectors and erase blocks, the memory space can be used much more efficiently. Because certain code modules and data storage segments must reside by themselves in their own protected sectors, the wasted and unused memory space that occurs with large sector and large block erase Flash memory devices can be greatly reduced. This increased memory space efficiency allows additional code routines and data storage segments to be added while still maintaining the same overall device density.

Figure 2-1. 8-SOIC Top View

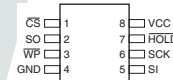
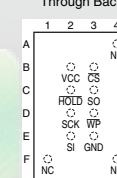


Figure 2-2. 8-UDFN Top View



Figure 2-3. 11-dBG (Top View Through Back of Die)



اطلاعات فنی مربوط به برخی از آی سی های بکار رفته در آیفون 4G

74LVC2G04 Dual inverter



- FEATURES**
- Wide supply voltage range from 1.65 V to 5.5 V
 - 5 V tolerant input/output for interfacing with 5 V logic
 - High noise immunity
 - Complies with JEDEC standard:
 - JESD8-7 (1.65 V to 1.95 V)
 - JESD8-5 (2.3 V to 2.7 V)
 - JESD88/JESD236 (2.7 V to 3.6 V)
 - ESD protection:
 - HBM EIA/JESD22-A114-B exceeds 2000 V
 - MM EIA/JESD22-A115-A exceeds 200 V
 - 224 mA output drive ($V_{CC} = 3.0$ V)
 - CMOS low power consumption
 - Latch-up performance exceeds 250 mA
 - Direct interface with TTL levels
 - Multiple package options
 - Specified from -40 °C to +85 °C and -40 °C to +125 °C

DESCRIPTION

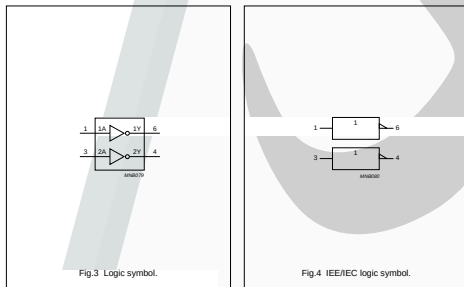
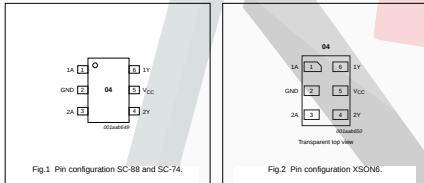
The 74LVC2G04 is a high-performance, low-power, low-voltage, 5-gate CMOS device and superior to most advanced CMOS compatible TTL families.

Inputs can be driven from either 3.3 V or 5 V devices. These features allow the use of these devices as translators in a mixed 3.3 V and 5 V environment.

This device is fully specified for partial power-down applications using I_{DD} . The I_{DD} circuitry disables the output, preventing the damaging backflow current through the device when it is powered down.

The 74LVC2G04 provides two inverting buffers.

PIN	SYMBOL	DESCRIPTION
1	1A	data input
2	GND	ground (0 V)
3	2A	data input
4	2Y	data output
5	V _{CC}	supply voltage
6	1Y	data output



BGS12AL7-6

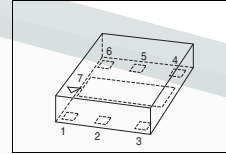
SPDT RF Switch



1 Features

Main features:

- Low insertion loss
- High port-to-port-isolation
- Low harmonic generation
- On-chip control logic, only one control line required
- High ESD robustness
- No external components required
- General purpose switch for applications up to 3 GHz
- Small leadless package TSLP-7-6
- Lead and halogen free package (RoHS and WEEE compliant)



Description

The BGS12AL7-6 General Purpose RF MOS switch is designed to cover a broad range of applications from 30 MHz to 3 GHz. The symmetric design of its single pole double throw configuration, as shown in Figure 1 offers high design flexibility. This single supply chip integrates on-chip CMOS logic driven by a simple, single-pin CMOS or TTL compatible control input signal. The 0.1 dB compression point exceeds the switch's maximum input power level of 21 dBm, resulting in linear performance at all signal levels. The RF switch has a very low insertion loss of 0.4 dB in the 1 GHz and 0.5 dB in the 2 GHz range.

Unlike GaAs technology, external DC blocking capacitors at the RF ports are only required if DC voltage is applied externally.

The BGS12AL7-6 RF switch is manufactured in Infineon's patented MOS technology, offering the performance of GaAs with the economy and integration of conventional CMOS including the inherent higher ESD robustness.

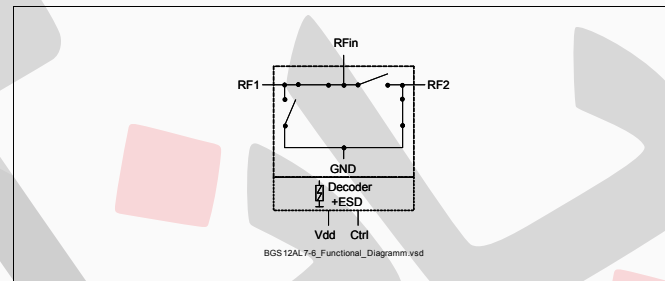


Figure 1 Functional Diagram

Pin Description

Table 3 Pin Description

Pin No.	Name	Pin Type	Buffer Type	Function
1	RF2	I/O		RF Port 2 Out
2	GND	GND		Ground
3	RF1	I/O		RF Port 1 Out
4	Vdd	PWR		Supply Voltage
5	RFIN	I/O		RF Port In
6	CTRL	I		Control Pin
7	NC	NC		It is recommended to connect Pin 7 to Ground

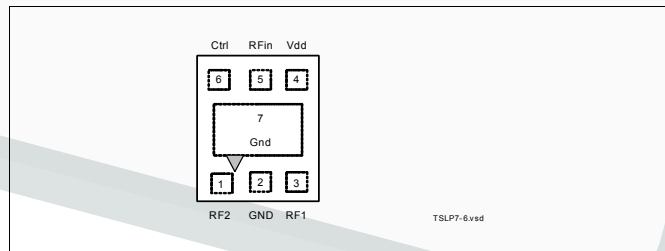


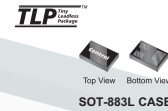
Figure 2 Pin Configuration (top view)

Table 4 Truth Table

Ctrl 1	RF 1	RF 2
0	1	0
1	0	1

CEDM7001

SURFACE MOUNT
N-CHANNEL
ENHANCEMENT-MODE
SILICON MOSFET



DESCRIPTION:

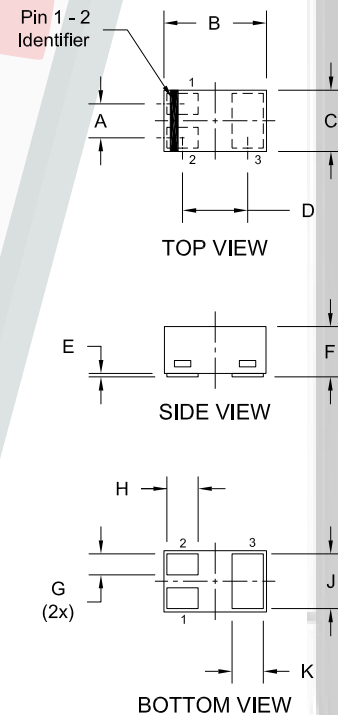
The CENTRAL SEMICONDUCTOR CEDM7001 is an N-Channel Enhancement-mode Field Effect Transistor, manufactured by the N-Channel DMOS Process, designed for high speed pulsed amplifier and driver applications. This MOSFET offers Low $r_{DS(on)}$ and Low Threshold Voltage.

FEATURES:

- 100mW Power Dissipation
- 0.4mm Low Package Profile
- Low $r_{DS(on)}$
- Low Threshold Voltage
- Logic Level Compatible
- Small, TLP™ 1x0.6mm, SOT-883L Leadless Surface Mount Package

APPLICATIONS:

- Load/Power Switches
- DC/DC Converters
- Battery Powered Portable Equipment



FDFME3N311ZT



FDFME3N311ZT
Integrated N-Channel PowerTrench® MOSFET and Schottky Diode
30 V, 1.6 A, 299 mΩ

Features

- Max $r_{DS(on)} = 299$ mΩ at $V_{GS} = 4.5$ V, $I_D = 1.6$ A
- Max $r_{DS(on)} = 410$ mΩ at $V_{GS} = 2.5$ V, $I_D = 1.3$ A
- Low profile: 0.55 mm maximum in the new package MicroFET 1.6x1.6 Thin
- Free from halogenated compounds and antimony oxides
- HBM ESD protection level > 1600V (Note3)
- RoHS Compliant

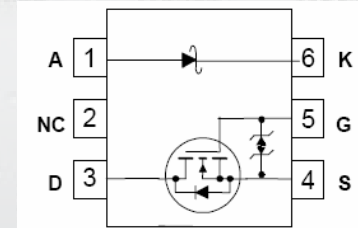
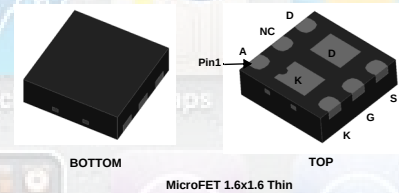
General Description

This device is designed specifically as a single package solution for a boost topology in cellular handset and other ultra-portable applications. It features a MOSFET with low input capacitance, total gate charge and on-state resistance. An independently connected schottky diode with low forward voltage and reverse leakage current to maximize boost efficiency.

The MicroFET 1.6x1.6 Thin package offers exceptional thermal performance for its physical size and is well suited to switching and linear mode applications.

Applications

- Boost Functions



IPHONE

4

اطلاعات فنی مربوط به برخی از آی سی های بکار رفته در آیفون 4G



IPHONE

4



ISL54200

intersil®

USB 2.0 High/Full Speed Multiplexer

The Intersil ISL54200 dual 2:1 multiplexer IC is a single supply part that can operate from a single 2.7V to 5.5V supply. It contains two SPDT (Single Pole/Double Throw) switches configured as a DPDT. The part was designed for switching between USB High-Speed and USB Full-Speed sources in portable battery powered products.

The 7 Ω normally-closed (NC) FSx switches can swing rail-to-rail and were specifically designed to pass USB full speed data signals (12Mbps) that range from 0V to 3.6V. The 4.5 Ω normally-open (NO) HSx switches have high bandwidth and low capacitance and were specifically designed to pass USB high speed data signals (480Mbps) with minimal distortion.

The part can be used in Personal Media Players and other portable battery powered devices that need to switch between a high-speed transceiver and a full-speed transceiver while connected to a single USB host (computer).

The digital logic inputs are 1.8V logic compatible when operated with a 2.7V to 3.6V supply. The part has an enable pin to open all switches. It can be used to facilitate proper bus disconnect and connection when switching between the USB sources.

The ISL54200 is available in a 10 Ld 3mmx3mm TDFN and a small 10 Ld 2.1mmx1.6mm μ TQFN packages. It operates over a temperature range of -40 to +85°C.

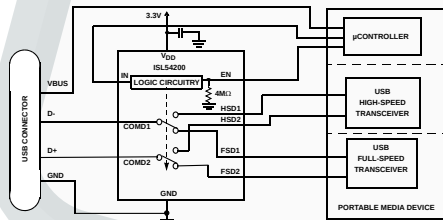
Features

- High Speed (480Mbps) and Full Speed (12Mbps) Signaling Capability per USB 2.0
- 1.8V Logic Compatible (2.7V to +3.6V supply)
- Enable Pin to Open all Switches
- -3dB Frequency
 - HSx Switches: 880MHz
 - FSx Switches: 550MHz
- Crosstalk @ 1MHz: -70dB
- Off Isolation @ 100kHz: -98dB
- Single Supply Operation (V_{DD}): 2.7V to 5.5V
- Available in Ultra-thin μ TQFN and TDFN Packages
- Pb-Free Plus Anneal Available (RoHS Compliant)

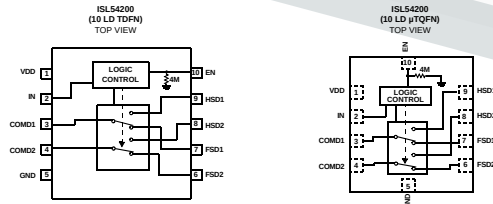
Applications

- MP3 and other Personal Media Players
- Cellular/Mobile Phones
- PDA's
- Digital Cameras and Camcorders

Application Block Diagram



Pinouts



LIS331DLH



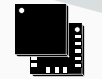
MEMS digital output motion sensor
ultra low-power high performance 3-axes "nano" accelerometer

Features

- Wide supply voltage, 2.16 V to 3.6 V
- Low voltage compatible I/Os, 1.8 V
- Ultra low-power mode consumption down to 10 μ A
- $\pm 2g/\pm 4g/\pm 8g$ dynamically selectable full-scale
- I^2C/SPI digital output interface
- 16 bit data output
- 2 independent programmable interrupt generators for free-fall and motion detection
- Sleep to wake-up function
- 6D orientation detection
- Embedded self-test
- 10000 g high shock survivability
- ECOMPAT[®] RoHS and "Green" compliant (see Section 8)

Applications

- Motion activated functions
- Free-fall detection
- Intelligent power saving for handheld devices
- Pedometer
- Display orientation
- Gaming and virtual reality input devices
- Impact recognition and logging
- Vibration monitoring and compensation



LGA 16 (3x3x1 mm)

Description

The LIS331DLH is an ultra low-power high performance three axes linear accelerometer belonging to the "nano" family, with digital I^2C/SPI serial interface standard output.

The device features ultra low-power operational modes that allow advanced power saving and smart sleep to wake-up functions.

The LIS331DLH has dynamically user selectable full scales of $\pm 2g/\pm 4g/\pm 8g$ and it is capable of measuring accelerations with output data rates from 0.5 Hz to 1 kHz.

The self-test capability allows the user to check the functioning of the sensor in the final application.

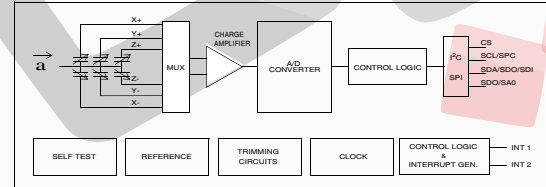
The device may be configured to generate interrupt signal by inertial wake-up/free-fall events as well as by the position of the device itself. Thresholds and timing of interrupt generators are programmable by the end user on the fly.

The LIS331DLH is available in small thin plastic land grid array package (LGA) and it is guaranteed to operate over an extended temperature range from -40 °C to +85 °C.

1 Block diagram and pin description

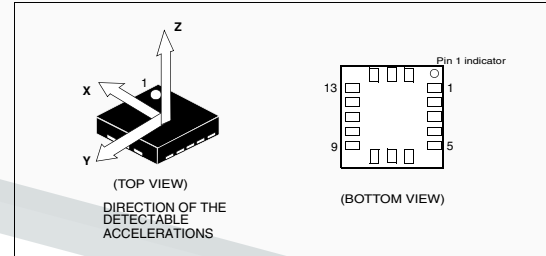
1.1 Block diagram

Figure 1. Block diagram



1.2 Pin description

Figure 2. Pin connection



MAX9718/MAX9719

MAXIM

Low-Cost, Mono/Stereo,
1.4W Differential Audio Power Amplifiers

General Description

The MAX9718/MAX9719 differential input audio power amplifiers are ideal for portable audio devices with internal speakers. The differential input structure improves noise rejection and provides common-mode rejection. A bridge-tied load (BTL) architecture minimizes external component count, while providing high-quality, power audio amplification. The MAX9718 is a single-channel amplifier while the MAX9719 is a dual-channel amplifier for stereo systems. Both devices deliver 1.4W continuous average power per channel to a 4 Ω load with less than 1% THD+N while operating from a single +5V supply. The devices are available as adjustable gain amplifiers or with internally fixed gains of 0dB, 3dB, and 6dB to reduce component count.

A shutdown input disables the bias generator and amplifiers and reduces quiescent current consumption to less than 100nA. The MAX9718 shutdown input can be set as active high or active low. These devices feature Maxim's comprehensive click-and-pop suppression circuitry that reduces audible clicks and pops during startup and shutdown.

The MAX9718 is pin compatible with the LM4895, and is available in 9-bump UCSP[™], 10-pin TDFN, and 10-pin μ MAX packages. The MAX9719 is available in 16-pin TQFN, 16-pin TSSOP, and 16-bump UCSP packages. Both devices operate over the -40°C to +85°C extended temperature range.

Applications

- Mobile Phones
- PDA's
- Portable Devices

Features

- 2.7V to 5.5V Single-Supply Operation
- Very High -93dB PSRR at 217Hz
- 1.4W into 4 Ω at 1% THD+N (per Channel)
- Differential Input
- Internal Fixed Gain to Reduce Component Count
- Adjustable Gain Option (MAX9718A/MAX9719A)
- 100nA Low-Power Shutdown Mode
- No Audible Clicks or Pops at Power-Up/Down
- Improved Performance Pin-Compatible Upgrade to LM4895 (MAX9718D)

Ordering Information

PART	TEMP RANGE	PIN-PACKAGE	GAIN (dB)
MAX9718AEBL-T*	-40°C to +85°C	3 x 3 UCSP	Adj
MAX9718AETB*	-40°C to +85°C	10 TDFN-EP**	Adj
MAX9718AEBUB	-40°C to +85°C	10 μ MAX-EP**	Adj

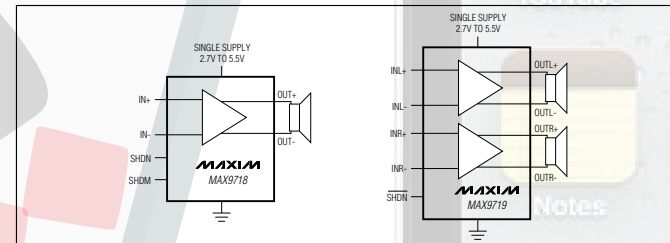
*Future product—contact factory for availability.
**EP = Exposed paddle.

Ordering Information continued at end of data sheet.

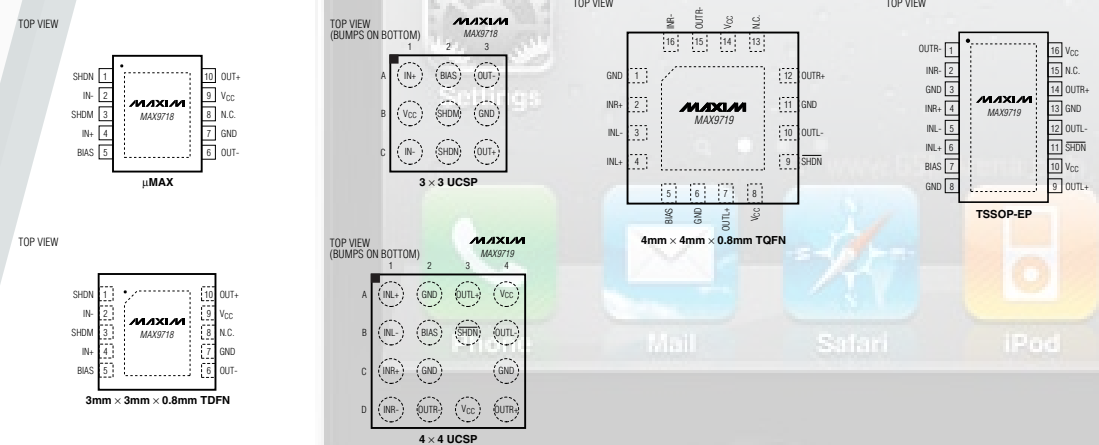
Pin Configurations appear at end of data sheet.

UCSP is a trademark of Maxim Integrated Products, Inc.

Simplified Block Diagram



Pin Configurations



اطلاعات فنی مربوط به برخی از آی سی های بکار رفته در آیفون 4G



Never stop thinking

X-GOLD™616

High Performance Modem Solution for Smart Phones

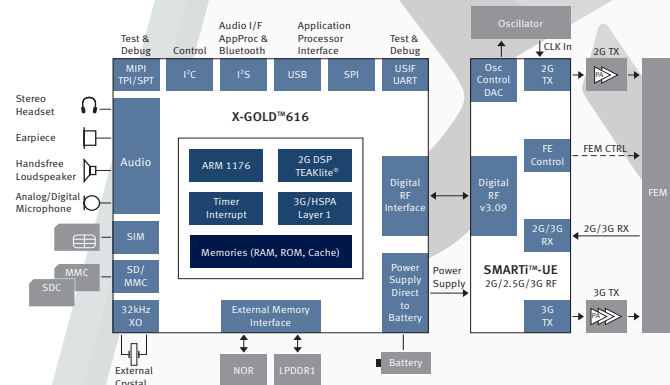
THE INFINEON X-GOLD™616 is a cellular system on chip comprising of the 2G/3G digital and analogue baseband plus the power management function all monolithically integrated in 65nm CMOS technology. It is Infineon's 3rd generation 3G baseband solution and is taking the next step in bringing enhanced modem features such as HSDPA and HSUPA to the mass market.

This modem solution is designed for an optimized smart phone system setup together with an application processor. In addition it addresses the market segments for cost optimized cellular modem solutions like PC modems, data cards, M2M modules and cellular automotive solutions. The X-GOLD™616 provides the complete modem functionality offering HSDPA cat 8 (7.2Mbps), HSUPA cat 6 (5.7Mbps), EDGE multi slot class 33 and includes the latest OMTp security standards.

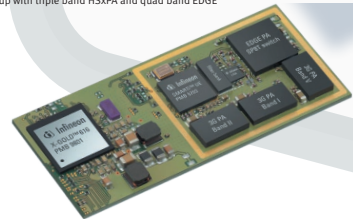
The processing of the 2G/3G cellular protocol stack is handled by an ARM® 1176 embedded microcontroller. The physical layer and the voice processing is handled by a dedicated hardware accelerator and DSP sub system.

The X-GOLD™616 enables the XMM™6160 platform solution; a reference design with the complete RF engine, the integrated release 6 protocol stack and modem interface SW for the inter processor communication via various HW interfaces. The integration of all baseband and PMIC functions and the combination with Infineon's SMART™UE RF engine heralds lowest PCB footprint, below 700mm² for triple band 3G and quad band EDGE and offers optimized stand-by and talk times. The solution is validated with an Inter Operability Test Program at infrastructure vendors and operators, to significantly reduce the time to market for customers end product.

Block Diagram



XMM™6160 Smartphone Platform Solution
Setup with triple band HSxPA and quad band EDGE



- Platform Features**
- Modem Area < 7cm²; ~100 components
 - Standby current
 - 2G: 0.9mA
 - 3G: 1.1mA
 - 3GPP Release 6 Protocol stack
 - HSDPA cat 8, HSUPA cat 6
 - 3 band HSPA, quad band EDGE
 - Optional up to 5 band HSPA possible
 - A-GPS interfacing

Note: TEAKLite® is a registered trademark of PanthosCeva, Inc.

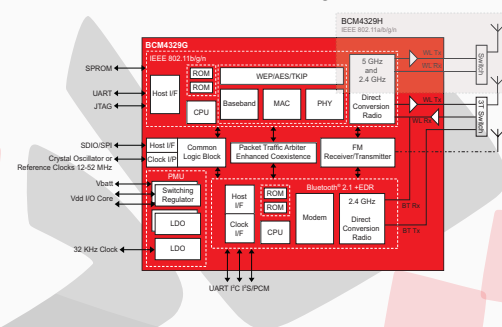
BCM4329

SINGLE-CHIP 802.11n/BLUETOOTH®/FM (Rx AND Tx)



- System Level Features**
 - Industry's most integrated 65 nm single-chip combo device
 - Single-band (2.4 GHz) 802.11b/g/n or dual-band (2.4 GHz and 5 GHz) 802.11a/b/g/n with Bluetooth 2.1 + EDR and FM receiver and transmitter
 - Lowest overall cost solution
 - Full featured, on-chip Power Management Unit
 - Supports direct battery (2.3V to 5.5V) connection
 - Single driver software architecture for easy migration from existing to future embedded WLAN and Bluetooth devices
 - Integrates InConcert™ collaborative BT-WLAN coexistence with the industry's most robust coexistence performance
 - Supports IEEE 802.15.2 external three-wire coexistence scheme enabling support for additional wireless technologies like WiMax™
 - Shared Bluetooth and WLAN receive signal path (eliminates the need for an external power splitter while maintaining excellent sensitivity for both Bluetooth and WLAN)
- Bluetooth and FM Key Features**
 - Bluetooth Core Specification Version 2.1 + EDR compliant with provisions supporting future specifications
 - Bluetooth Class 1 or Class 2 transmitter operation
 - Supports extended Synchronous Connections-Oriented (eSCO) transport for enhanced voice quality (by allowing retransmission of dropped packets)
 - Host Interface support
 - Host Controller Interface (HCI): High-speed UART
 - Audio: PCM
 - FM Control: HCI and BSC (I²C-compliant) ports
 - FM Audio: Stereo analog input and output, bidirectional I²S, and PCM ports
 - Increased battery life (reduced in power consumption in all operating modes)
 - FM receiver and transmitter (76 MHz to 108 MHz FM bands); Standards supported:
 - European Radio Data Systems (RDS)
 - North American Radio Broadcast Data System (RBDS)
 - Programmable FM transmit output power
 - Supports two simultaneous Advanced Audio Distribution Profiles (A2DP) for sharing music between two Bluetooth headsets
 - Wideband speech support
 - Packet Loss Concealment (PLC) for improved RF link budget to headsets

BCM4329 Block Diagram



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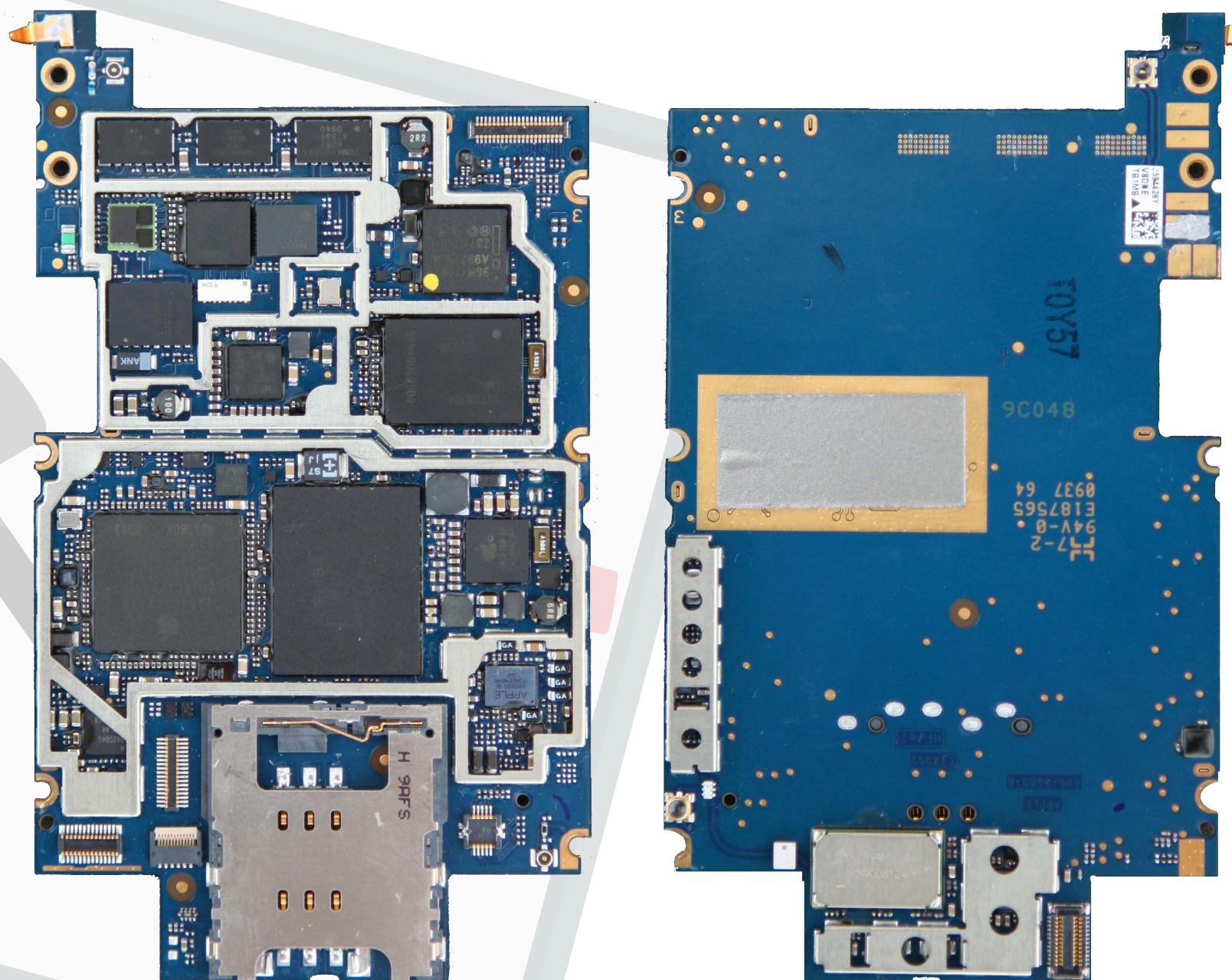


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شایان ذکر می باشد که شمایک موجود در اینترنت از این گوشی بصورت عکس می باشد و قابلیت جستجو را ندارد، ولی در این شمایک که توسط پاناکل برای اولین بار ارائه می گردد جهت استفاده راحتتر شما عزیزان تمامی شمایک بصورت وکتور اجرا گردیده و قابلیت جستجو را دارد، پس از این شمایک بی نظیر لذت ببرید و با یک جستجوی ساده قطعه مورد نظر خود را بیابید.

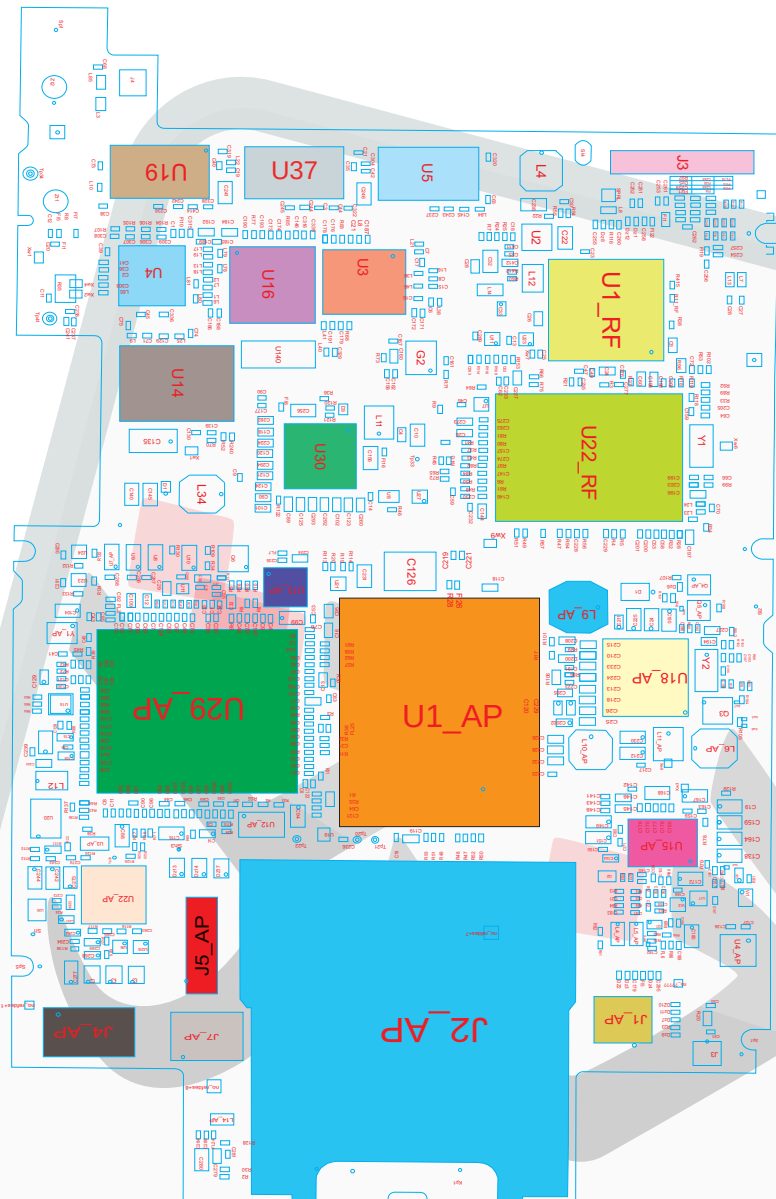
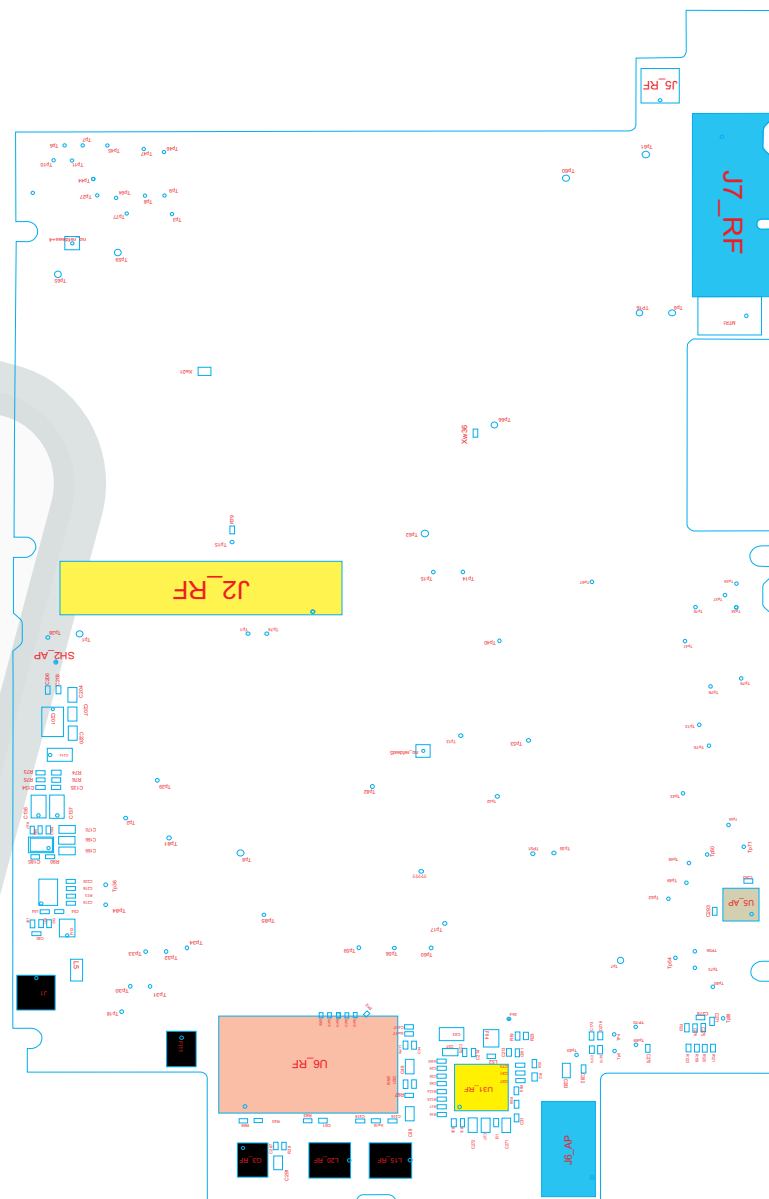
لازم به توضیح می باشد که در موقع جستجوی قطعات ممکن است یک شماره قطعه خاص دوبار در روی برد (COMPONENT PLACIN) تکرار شده باشد، در اینجا میبایست دقت کنید و ببینید قطعه ای که جستجو کرده اید در بخش AP بوده است یا در بخش RF که از روی شمایک براحتی قابل تشخیص می باشد، مثلاً R50 هم در قسمت AP و هم در قسمت RF موجود می باشد ولی برای اینکه تشخیص دهیم این مقاومتی که دنبال آن هستیم متعلق به کدام بخش است می بایست به محل قرار گیری آن روی برد و جایگاه آن در شمایک دقت کنید زیرا دویخش AP و RF به راحتی بر روی گوشی قابل تشخیص می باشند.

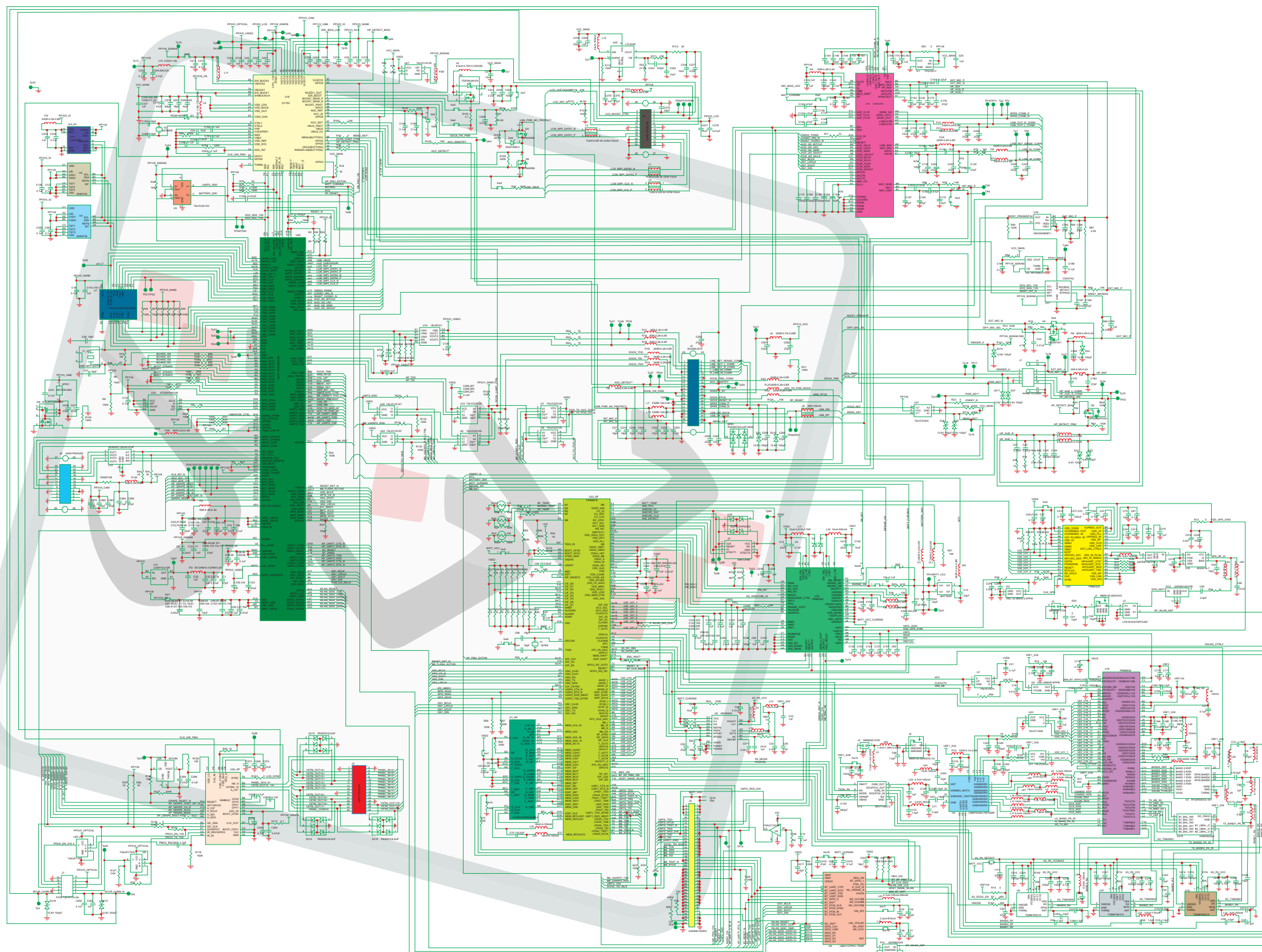
مطلب دیگر اینکه ممکن به دنبال آی سی خاصی باشید که شماره شناسایی آن روی برد (COMPONENT PLACING) نباشد، این بدان معناست که شماره شناسایی قطعه ممکن است در شمایک و برد همخوانی نداشته باشد، البته در این شمایک این اشکالات برطرف شده است ولی بازهم جهت اطمینان و جلوگیری از خطا بیان می شود. در این صورت یکی از قطعات نزدیک اعم از خازن، مقاومت و یا هر قطعه ای در شمایک نزدیک آی سی مورد نظرتان را جستجو نمایید و محل آن قطعه در روی برد مطمئناً کنار همان آی سی مورد نظر شما خواهد بود بدین ترتیب به راحتی قطعه مورد نظر خود را می توانید بر روی برد پیدا کنید. البته برای اطمینان می توانید دو یا سه قطعه کنار آن آی سی را جستجو نمایید.

مطلب آخر در مورد COMPONENT PLACING گوشی iPhone 3G می باشد که متأسفانه موجود نیست ولی جای بسی خوشحالیست که برد آن تا حد زیادی شبیه به iPhone 3GS می باشد و چون این شمایک قابلیت جستجو دارد با کمی دقت می توانید بخشی مورد نظر خود را با تطبیق به راحتی پیدا نمایید.



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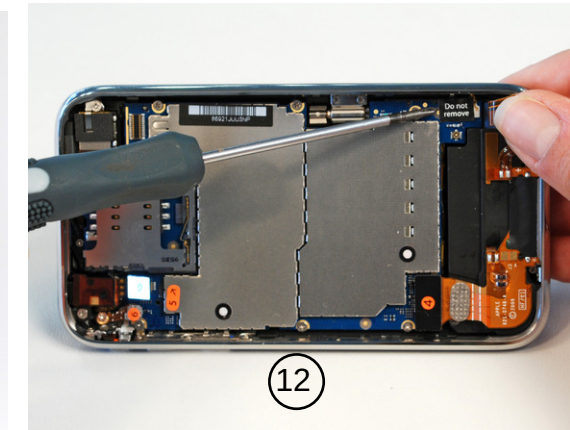
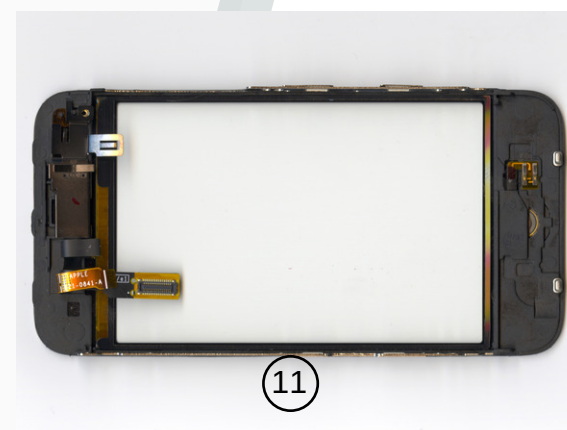
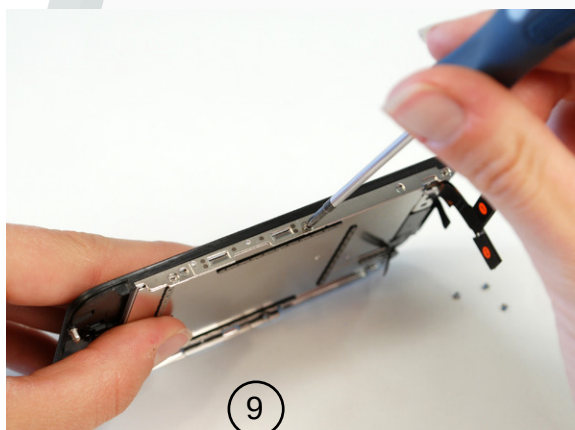
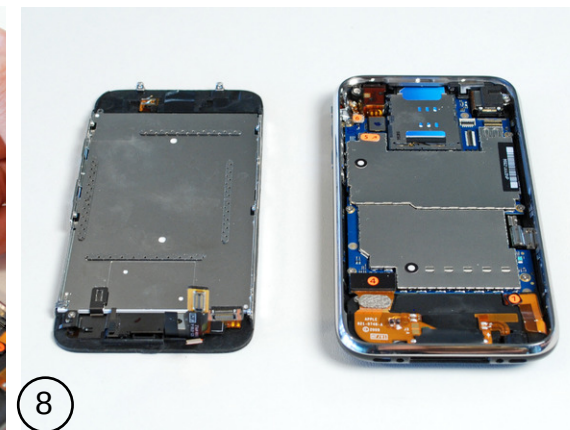
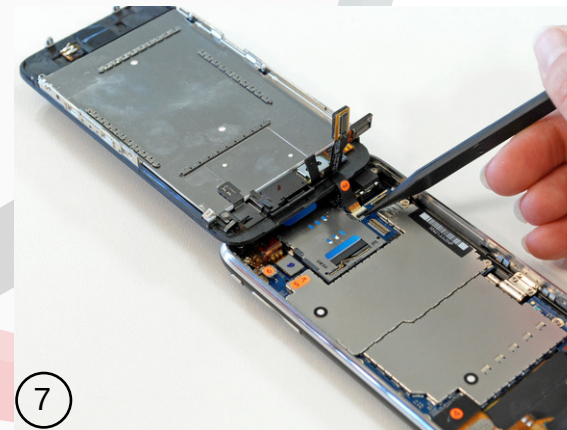
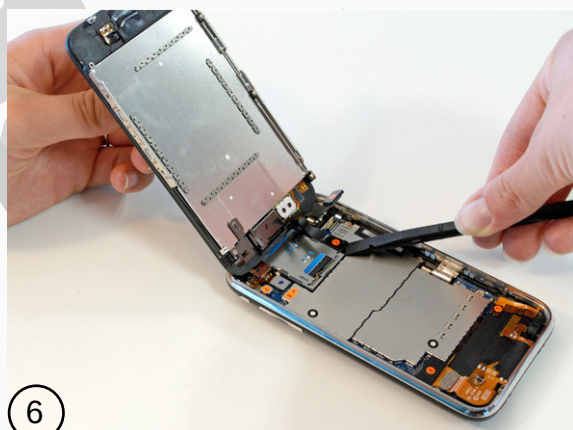
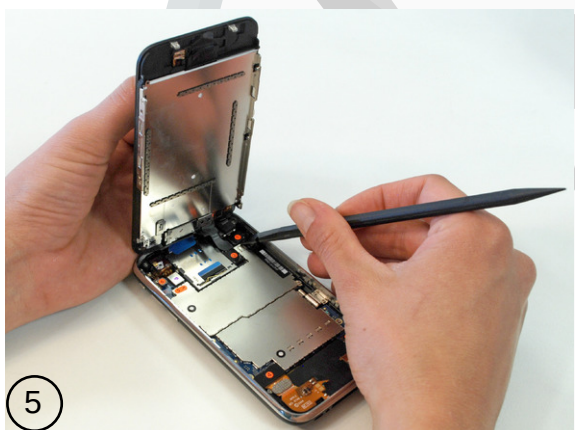
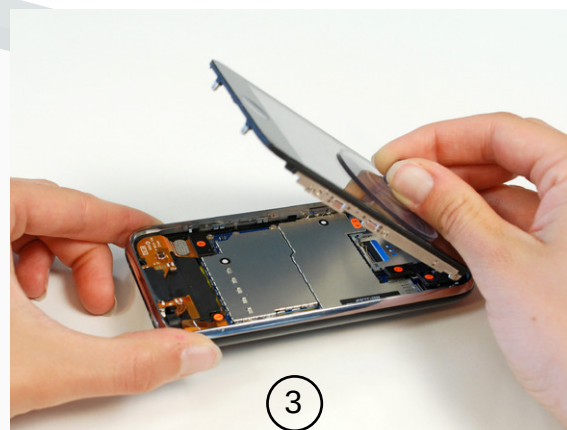
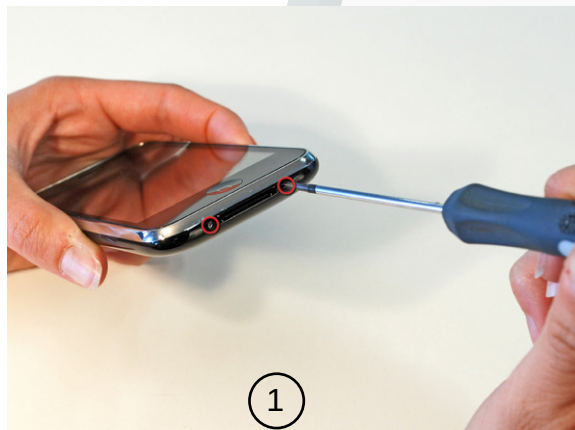


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تصاویر مربوط به بازوبسته کردن آیفون 3GS

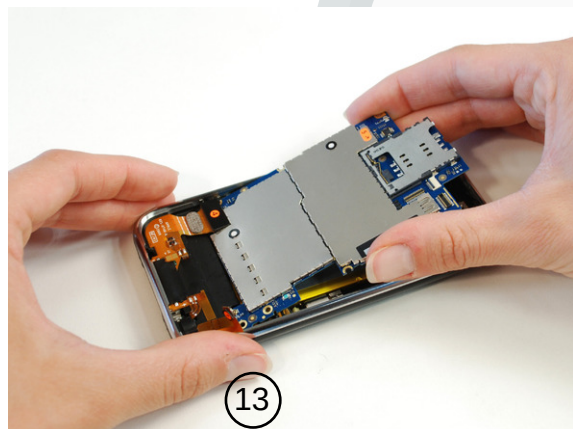


تصاویر مربوط به بازوبسته کردن آیفون 3GS

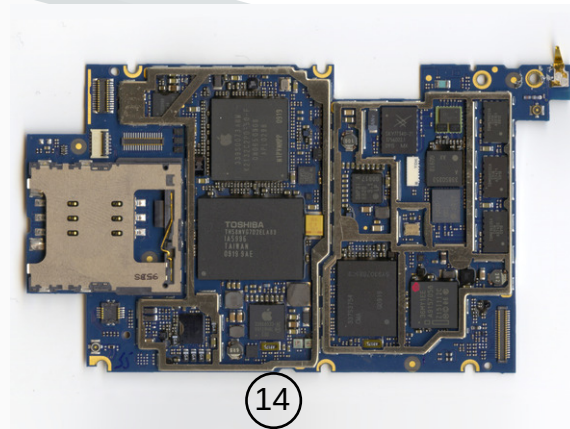


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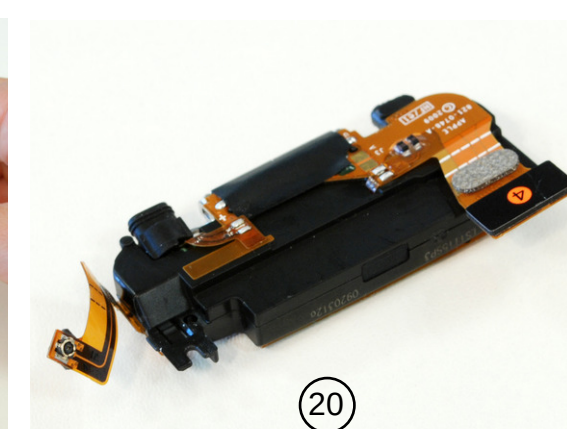
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اطلاعات فنی برخی از آی سی های بکار رفته در گوشی



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74AUP1T97



1. General description

The 74AUP1T97 provides low-power, low-voltage configurable logic gate functions. The output state is determined by eight patterns of 3-bit input. The user can choose the logic functions MUX, AND, OR, NAND, NOR, inverter and buffer. All inputs can be connected to V_{CC} or GND.

This device ensures a very low static and dynamic power consumption across the entire V_{CC} range from 2.3 V to 3.6 V.

The 74AUP1T97 is designed for logic-level translation applications with input switching levels that accept 1.8 V low-voltage CMOS signals, while operating from either a single 2.5 V or 3.3 V supply voltage.

The wide supply voltage range ensures normal operation as battery voltage drops from 3.6 V to 2.3 V.

This device is fully specified for partial power-down applications using I_{OFF} .

The I_{OFF} circuitry disables the output, preventing the damaging backflow current through the device when it is powered down.

Schmitt trigger inputs make the circuit tolerant to slower input rise and fall times across the entire V_{CC} range.

2. Features

- Wide supply voltage range from 2.3 V to 3.6 V
- High noise immunity
- ESD protection:
 - HBM JESD22-A114E Class 3A exceeds 5000 V
 - MM JESD22-A115-A exceeds 200 V
 - CDM JESD22-C101C exceeds 1000 V
- Low static power consumption; $I_{CC} = 1.5 \mu A$ (maximum)
- Latch-up performance exceeds 100 mA per JEDEC 78 Class II
- Inputs accept voltages up to 3.6 V
- Low noise overshoot and undershoot < 10 % of V_{CC}
- I_{OFF} circuitry provides partial Power-down mode operation
- Multiple package options
- Specified from $-40^{\circ}C$ to $+85^{\circ}C$ and $-40^{\circ}C$ to $+125^{\circ}C$

3. Functional diagram

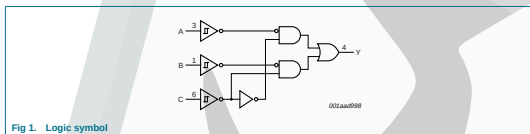


Fig 1. Logic symbol

6. Pinning information

6.1 Pinning

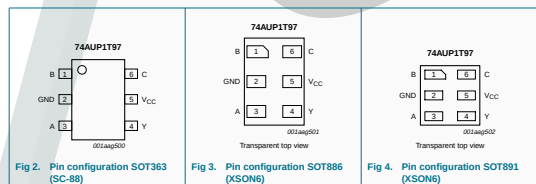


Fig 2. Pin configuration SOT363 (SC-88)

Fig 3. Pin configuration SOT886 (XS0N6)

Fig 4. Pin configuration SOT891 (XS0N6)

6.2 Pin description

Symbol	Pin	Description
B	1	data input
GND	2	ground (0 V)
A	3	data input
Y	4	data output
V_{CC}	5	supply voltage
C	6	data input

74LVC1G79

Single D-type flip-flop; positive-edge trigger

1. General description

The 74LVC1G79 provides a single positive-edge triggered D-type flip-flop.

Information on the data input is transferred to the Q-output on the LOW-to-HIGH transition of the clock pulse. The D-input must be stable one set-up time prior to the LOW-to-HIGH clock transition for predictable operation.

Inputs can be driven from either 3.3 V or 5 V devices. This feature allows the use of this device in a mixed 3.3 V and 5 V environment.

This device is fully specified for partial power-down applications using I_{OFF} . The I_{OFF} circuitry disables the output, preventing the damaging backflow current through the device when it is powered down.

2. Features

- Wide supply voltage range from 1.65 V to 5.5 V
- High noise immunity
- Complies with JEDEC standard:
 - JESD8-7 (1.65 V to 1.95 V)
 - JESD8-5 (2.3 V to 2.7 V)
 - JESD8B/JESD36 (2.7 V to 3.6 V)
- ± 24 mA output drive ($V_{CC} = 3.0$ V)
- CMOS low power consumption
- Latch-up performance exceeds 250 mA
- Direct interface with TTL levels
- Inputs accept voltages up to 5 V
- Multiple package options
- ESD protection:
 - HBM JESD22-A114E exceeds 2000 V
 - MM JESD22-A115-A exceeds 200 V
- Specified from $-40^{\circ}C$ to $+125^{\circ}C$

3. Functional diagram

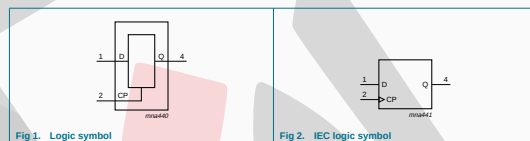


Fig 1. Logic symbol

Fig 2. IEC logic symbol

6. Pinning information

6.1 Pinning

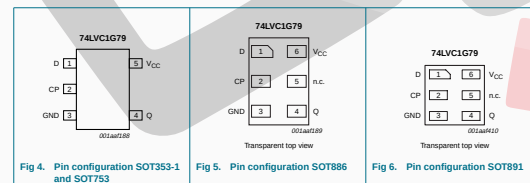


Fig 4. Pin configuration SOT353-1 and SOT753

Fig 5. Pin configuration SOT886

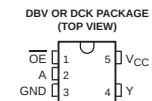
Fig 6. Pin configuration SOT891

6.2 Pin description

Symbol	Pin	Description
D	1	data input
CP	2	data pulse input
GND	3	ground (0 V)
Q	4	data output
n.c.	-	not connected
V_{CC}	5	supply voltage

SN74LVC1G125

SINGLE BUS BUFFER GATE WITH 3-STATE OUTPUTS



description

This bus buffer gate is designed for 1.65-V to 5.5-V V_{CC} operation.

The SN74LVC1G125 features a single line driver with a 3-state output. The output is disabled when the output-enable ($\overline{OE}$) input is high.

To ensure the high-impedance state during power up or power down, $\overline{OE}$ should be tied to V_{CC} through a pullup resistor; the minimum value of the resistor is determined by the current-sinking capability of the driver.

This device is fully specified for partial-power-down applications using I_{OFF} . The I_{OFF} circuitry disables the outputs, preventing damaging current backflow through the device when it is powered down.

The SN74LVC1G125 is characterized for operation from $-40^{\circ}C$ to $85^{\circ}C$.

FUNCTION TABLE		
INPUTS	OUTPUT	
$\overline{OE}$	A	Y
L	H	H
L	L	L
H	X	Z

logic symbol†



† This symbol is in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.

logic diagram (positive logic)



recommended operating conditions (see Note 4)

		MIN	MAX	UNIT
V_{CC} Supply voltage	Operating	1.65	5.5	V
	Data retention only	1.5		
V_{IH} High-level input voltage	$V_{CC} = 1.65$ V to 1.95 V	$0.65 \times V_{CC}$		V
	$V_{CC} = 2.3$ V to 2.7 V	1.7		
	$V_{CC} = 3$ V to 3.6 V	2		
	$V_{CC} = 4.5$ V to 5.5 V	$0.7 \times V_{CC}$		
V_{IL} Low-level input voltage	$V_{CC} = 1.65$ V to 1.95 V	$0.35 \times V_{CC}$		V
	$V_{CC} = 2.3$ V to 2.7 V	0.7		
	$V_{CC} = 3$ V to 3.6 V	0.8		
	$V_{CC} = 4.5$ V to 5.5 V	$0.3 \times V_{CC}$		
V_I Input voltage		0	5.5	V
V_O Output voltage		0	V_{CC}	V
I_{OH} High-level output current	$V_{CC} = 1.65$ V	-4		mA
	$V_{CC} = 2.3$ V	-8		
	$V_{CC} = 3$ V	-16		
	$V_{CC} = 4.5$ V	-32		
I_{OL} Low-level output current	$V_{CC} = 1.65$ V	4		mA
	$V_{CC} = 2.3$ V	8		
	$V_{CC} = 3$ V	16		
	$V_{CC} = 4.5$ V	32		
dV/dt Input transition rise or fall rate	$V_{CC} = 1.8$ V to 1.5 V, 2.5 V to 0.2 V	20		ns/V
	$V_{CC} = 3.3$ V to 0.3 V	10		
T_A Operating free-air temperature		-40	85	$^{\circ}C$

NOTE 4: All unused inputs of the device must be held at V or GND to ensure proper device operation. Refer to the TI application report.

MAX882/MAX883/MAX884



Features

- Guaranteed 200mA Output Current at $T_J = +125^{\circ}C$, with Foldback Current Limiting
- High-Power (1.5W) 8-Pin SO Package
- Dual Mode™ Operation: Fixed or Adjustable Output from 1.25V to 11V
- Large Input Range (2.7V to 11.5V)
- Internal 1.1Ω P-Channel Pass Transistor Draws No Base Current
- Low 220mV Dropout Voltage at 200mA Output Current
- 11μA Typical Quiescent Current
- 1μA (max) Shutdown Mode or 7μA (typ) Standby Mode
- Low-Battery Detection Comparator
- Reverse-Current Protection
- Thermal Overload Protection

Ordering Information

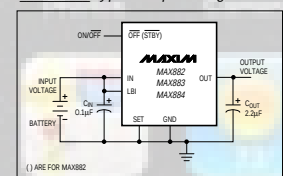
PART	TEMP. RANGE	PIN-PACKAGE
MAX882CPA	$0^{\circ}C$ to $+70^{\circ}C$	8 Plastic DIP
MAX882CSA	$0^{\circ}C$ to $+70^{\circ}C$	8 SO
MAX882CID	$0^{\circ}C$ to $+70^{\circ}C$	Dice*
MAX882EPA	$-40^{\circ}C$ to $+85^{\circ}C$	8 Plastic DIP
MAX882ESA	$-40^{\circ}C$ to $+85^{\circ}C$	8 SO
MAX882MJA	$-55^{\circ}C$ to $+125^{\circ}C$	8 CERDIP**

Ordering Information continued at end of data sheet.

* Dice are tested at $T_J = +25^{\circ}C$, DC parameters only.

** Contact factory for availability.

Typical Operating Circuit



5V/3.3V or Adjustable, Low-Dropout, Low I_Q , 200mA Linear Regulators

MAX882/MAX883/MAX884

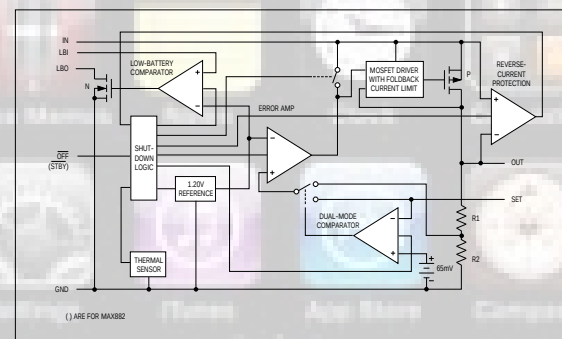


Figure 1. MAX882/MAX883/MAX884 Functional Diagram

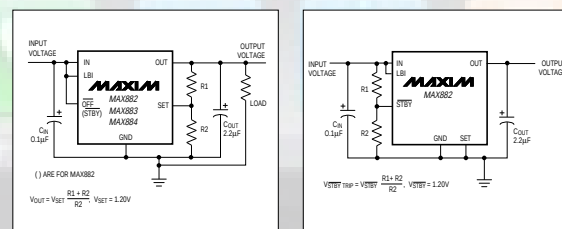


Figure 2. Adjustable Output Using External Feedback Resistors

Figure 3. Setting an Undervoltage Lockout Threshold Using STBY

اطلاعات فنی برخی از آی سی های بکار رفته در گوشی



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74LVC2G04 Dual inverter



FEATURES

- Wide supply voltage range from 1.65 V to 5.5 V
- 5 V tolerant input/output for interfacing with 5 V logic
- High noise immunity
- Complies with JEDEC standard:
 - JESD8-7 (1.65 V to 1.95 V)
 - JESD8-5 (2.3 V to 2.7 V)
 - JESD8B/JESD36 (2.7 V to 3.6 V).
- ESD protection:
 - HBM EIA/JESD22-A114-B exceeds 2000 V
 - MM EIA/JESD22-A115-A exceeds 200 V.
- ± 24 mA output drive ($V_{CC} = 3.0$ V)
- CMOS low power consumption
- Latch-up performance exceeds 250 mA
- Direct interface with TTL levels
- Multiple package options
- Specified from -40°C to $+85^{\circ}\text{C}$ and -40°C to $+125^{\circ}\text{C}$.

DESCRIPTION

The 74LVC2G04 is a high-performance, low-power, low-voltage, Si-gate CMOS device and superior to most advanced CMOS compatible TTL families.

Inputs can be driven from either 3.3 V or 5 V devices. These feature allows the use of these devices as translators in a mixed 3.3 V and 5 V environment.

This device is fully specified for partial power-down applications using I_{DD} . The I_{DD} circuitry disables the output, preventing the damaging backflow current through the device when it is powered down.

The 74LVC2G04 provides two inverting buffers.



Fig.1 Pin configuration SC-88 and SC-74.

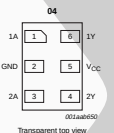


Fig.2 Pin configuration XSON6.

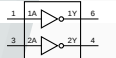


Fig.3 Logic symbol.



Fig.4 IEE/EC logic symbol.

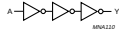


Fig.5 Logic diagram (one driver).

74LVC2G34 Dual buffer gate



FEATURES

- Wide supply voltage range from 1.65 V to 5.5 V
- 5 V tolerant input/output for interfacing with 5 V logic
- High noise immunity
- Complies with JEDEC standard:
 - JESD8-7 (1.65 V to 1.95 V)
 - JESD8-5 (2.3 V to 2.7 V)
 - JESD8B/JESD36 (2.7 V to 3.6 V).
- ESD protection:
 - HBM EIA/JESD22-A114-B exceeds 2000 V
 - MM EIA/JESD22-A115-A exceeds 200 V.
- ± 24 mA output drive ($V_{CC} = 3.0$ V)
- CMOS low power consumption
- Latch-up performance exceeds 250 mA
- Direct interface with TTL levels
- Multiple package options
- Specified from -40°C to $+85^{\circ}\text{C}$ and -40°C to $+125^{\circ}\text{C}$.

DESCRIPTION

The 74LVC2G34 is a high-performance, low-power, low-voltage, Si-gate CMOS device and superior to most advanced CMOS compatible TTL families.

Inputs can be driven from either 3.3 V or 5 V devices. These feature allows the use of these devices as translators in a mixed 3.3 V and 5 V environment.

This device is fully specified for partial power-down applications using I_{DD} . The I_{DD} circuitry disables the output, preventing the damaging backflow current through the device when it is powered down.

The 74LVC2G34 provides two buffers.

PINNING

PIN	SYMBOL	DESCRIPTION
1	1A	data input
2	GND	ground (0 V)
3	2A	data input
4	2Y	data output
5	V _{CC}	supply voltage
6	1Y	data output



Fig.1 Pin configuration SC-88 and SC-74.



Fig.2 Pin configuration XSON6.



Fig.3 Logic symbol.



Fig.4 Logic symbol (IEE/EC).

AK8973



3-axis Electronic Compass

1. Features

- 3-axis electronic compass IC
- Optimal built-in electronic compass for mobile phones and handy terminals
- High sensitivity Hall sensors are integrated.
- Functions
 - Built-in 8-bit ADC
 - Built-in amplifier for sensor signal amplification
 - Built-in 8-bit DAC for sensor signal offset compensation
 - Built-in EEPROM for storing individual adjustment values
 - Built-in temperature sensor
 - 8-bit digital output
 - Serial interface: I²C bus interface (supporting the low-voltage specification)
 - Automatic power-down function
 - Interrupt function for measurement data ready
 - Built-in master clock oscillator
- Operating temperatures: -30°C to $+85^{\circ}\text{C}$
- Operating supply voltage: $+2.5\text{V}$ to $+3.6\text{V}$
- Low current consumption/measurement time:
 - Power-down: 0.2 μA typ.
 - Magnetic sensor driving: 6.8 mA/12.6 ms
- Package: 16-pin QFN package: 4.0mm $\times$ 4.0mm $\times$ 0.7mm

2. Overview

AK8973 is a geomagnetism detection type electronic compass IC.

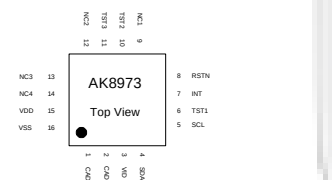
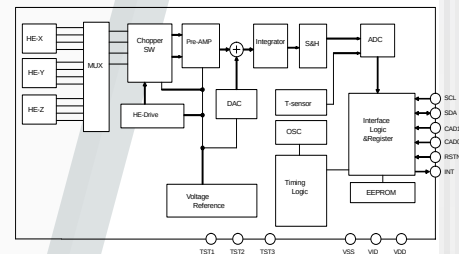
The small package of AK8973 integrates magnetic sensors for detecting geomagnetism in the X-axis, Y-axis, and Z-axis, and arithmetic circuit for processing the signal from each sensor. AK8973 outputs four data in total as 8-bit digital values respectively: 3-axis magnetic sensor measured values and temperature sensor read value. By processing the magnetic sensor measured values with an external CPU, azimuth data can be obtained. By using AK8973 integrated into the system, a navigation system is achieved with reduced space in portable equipment such as PDA or mobile phone incorporating the GPS function.

Specifically, AK8973 has the following features:

- Due to the built-in 8-bit ADC and serial interface, geomagnetism of the X-axis, Y-axis, and Z-axis can be detected as digital data.
- The serial interface corresponds to the I²C bus.
- A dedicated power supply is used for the serial interface, so the low-voltage specification can also be supported by applying 1.85V.
- Due to the built-in DAC for compensating the offset magnetic field, the position restraint with parts which generate the offset magnetic field such as speakers is reduced, and the degree of freedom about layout is expanded. Note 1)
- An EEPROM for storing the individual adjustment values of sensor sensitivity is built-in. The adjustment values are stored in factory at the time of shipment from AKM.
- The built-in temperature sensor as an accessory generates the 8-bit digital A/D-converted value. The temperature information is not used for azimuth calculation.
- The major circuit blocks of AK8973 are activated by the measurement request command from the controller, and transit to the power-down mode automatically at the end of measurement. That characteristic realizes the low power consumption required for mobile phones.
- The interrupt function for posting the completion of sensor signal measurement to the external CPU is built-in.
- The master clock oscillator is built-in. It is unnecessary to supply the clock from the outside.

Note 1) For AK8973, the offset magnetic field compensation range is approximately $\pm 2.0\text{mT}$ (typical geomagnetism range is approximately 0.05mT). Depending on usage or required accuracy, use with the full-range is available. However, for the azimuth measurement by the mobile phones, it is important to regard the following in the design phase: the magnetic field intensity of offset magnetic field source (e.g. magnet of speaker) is not fully controlled, and the temperature characteristic dispersion is noted. With AK8973, it is recommended that the design be performed with the parts layout where the offset magnetic field of each measurement axis is $\pm 0.8\text{mT}$ or less.

3. Block Diagram



BGA615L7



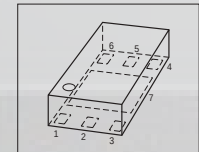
Never stop thinking

Silicon Germanium GPS Low Noise Amplifier

1 Silicon Germanium GPS Low Noise Amplifier

Features

- High gain: 18 dB
- Low Noise Figure: 0.9 dB
- Power off function
- Operating frequency 1575 MHz
- Supply voltage: 2.4 V to 3.2 V
- Tiny TSLP-7-1 leadless package
- B7HF Silicon Germanium technology
- RF output internally matched to 50 Ω
- Low external component count
- 1 kV HBM ESD protection (including Al-pin)
- Moisture sensitivity level: MSL 1



TSLP-7-1

Application

- 1575 MHz GPS

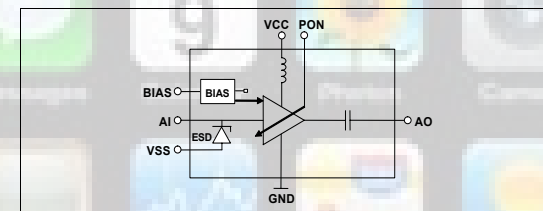


Figure 1 Block diagram

2 Description

The BGA615L7 is a front-end low noise amplifier for Global Positioning System (GPS) applications. The LNA provides 18 dB gain, 0.9 dB noise figure and high linearity performance, allowing it to be used as a first-stage LNA. Current consumption is as low as 5.6 mA. The BGA615L7 is based upon Infineon Technologies' B7HF Silicon Germanium technology. It operates over a 2.4 V to 3.2 V supply range.

PCB Configuration

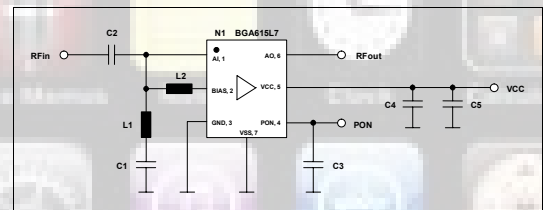


Figure 2 Schematic of BGA615L7

اطلاعات فنی برخی از آی سی های بکار رفته در گوشی



IPHONE 3GS



FDFMA3N109



Integrated N-Channel PowerTrench[®] MOSFET and Schottky Diode

General Description

This device is designed specifically as a single package solution for a boost topology in cellular handset and other ultra-portable applications. It features a MOSFET with low input capacitance, total gate charge and on-state resistance, and an independently connected Schottky diode with low forward voltage and reverse leakage current to maximize boost efficiency. The MicroFET 2x2 package offers exceptional thermal performance for its physical size and is well suited to switching and linear mode applications.

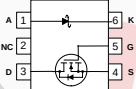
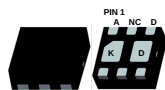
Features

MOSFET:

- 2.9 A, 30 V $R_{DS(on)} = 122 \text{ m}\Omega$ @ $V_{GS} = 4.5 \text{ V}$
 $R_{DS(on)} = 140 \text{ m}\Omega$ @ $V_{GS} = 3.0 \text{ V}$
 $R_{DS(on)} = 163 \text{ m}\Omega$ @ $V_{GS} = 2.5 \text{ V}$

Schottky:

- $V_f < 0.46 \text{ V}$ @ 500 mA
- Low profile – 0.8 mm maximum – in the new package MicroFET 2x2 mm
- RoHS Compliant



Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	± 12	V
I_D	Drain Current – Continuous ($T_J = 25^\circ\text{C}$, $V_{GS} = 4.5 \text{ V}$)	2.9	A
	– Continuous ($T_J = 25^\circ\text{C}$, $V_{GS} = 2.5 \text{ V}$)	2.7	A
	– Pulsed	10	A
P_D	Power Dissipation for Single Operation	1.5	W
	Power Dissipation for Single Operation	0.65	W
T_J, T_{STG}	Operating and Storage Temperature	-55 to $+150$	$^\circ\text{C}$
V_{RRM}	Schottky Reverse Peak Reverse Voltage	28	V
I_{FSM}	Schottky Average Forward Current	1	A

Symbol	Parameter	Rating	Units
R_{JA}	Thermal Resistance, Junction-to-Ambient	83	$^\circ\text{C/W}$
R_{JC}	Thermal Resistance, Junction-to-Case	193	$^\circ\text{C/W}$
R_{JA}	Thermal Resistance, Junction-to-Ambient	101	$^\circ\text{C/W}$
R_{JA}	Thermal Resistance, Junction-to-Ambient	228	$^\circ\text{C/W}$

Package Marking and Ordering Information

Device Marking	Device	Reel Size	Tape width	Quantity
109	FDFMA3N109	7"	8mm	3000 units

Electrical Characteristics

$T_J = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
--------	-----------	-----------------	-----	-----	-----	-------

Off Characteristics

BV_{DS}	Drain-Source Breakdown Voltage	$V_{GS} = 0 \text{ V}$, $I_D = 250 \mu\text{A}$	30			V
$\Delta BV_{DS}/\Delta T_J$	Breakdown Voltage Temperature Coefficient	$I_D = 250 \mu\text{A}$, Referenced to 25°C		25		mV/ $^\circ\text{C}$
I_{DSS}	Zero Gate Voltage Drain Current	$V_{GS} = 0 \text{ V}$, $V_{DS} = 0 \text{ V}$		1		μA
I_{SS}	Gate-Body Leakage Current	$V_{GS} = \pm 12 \text{ V}$, $V_{DS} = 0 \text{ V}$		± 10		μA

On Characteristics

$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$, $I_D = 250 \mu\text{A}$	0.4	3.0	1.5	V
$\Delta V_{GS}/\Delta T_J$	Gate Threshold Voltage Temperature Coefficient	$I_D = 250 \mu\text{A}$, Referenced to 25°C		-2		mV/ $^\circ\text{C}$
ΔT_J				75	123	$^\circ\text{C}$
				84	140	$^\circ\text{C}$
				92	163	$^\circ\text{C}$
				95	166	$^\circ\text{C}$
				136	203	$^\circ\text{C}$
				150	268	$^\circ\text{C}$

Dynamic Characteristics

C_{iss}	Input Capacitance	$V_{DS} = 15 \text{ V}$, $V_{GS} = 0 \text{ V}$, $f = 1.0 \text{ MHz}$	190	220		pF
C_{oss}	Output Capacitance	$V_{GS} = 4.5 \text{ V}$, $I_D = 2.9 \text{ A}$, $f = 1.0 \text{ MHz}$	30	40		pF
C_{rss}	Reverse Transfer Capacitance	$V_{GS} = 4.5 \text{ V}$, $I_D = 2.9 \text{ A}$, $f = 1.0 \text{ MHz}$	20	30		pF
$R_{DS(on)}$	Gate Resistance	$V_{GS} = 0 \text{ V}$, $f = 1.0 \text{ MHz}$	4.6			Ω

Switching Characteristics

t_{on}	Turn-On Delay Time	$V_{DS} = 15 \text{ V}$, $I_D = 1 \text{ A}$, $R_{DS(on)} = 6 \Omega$	6	12		ns
t_r	Turn-On Rise Time	$V_{DS} = 15 \text{ V}$, $I_D = 1 \text{ A}$, $R_{DS(on)} = 6 \Omega$	9	16		ns
t_{off}	Turn-Off Delay Time	$V_{DS} = 15 \text{ V}$, $I_D = 1 \text{ A}$, $R_{DS(on)} = 6 \Omega$	12	21		ns
t_f	Turn-Off Fall Time	$V_{DS} = 15 \text{ V}$, $I_D = 1 \text{ A}$, $R_{DS(on)} = 6 \Omega$	2	4		ns
Q_g	Total Gate Charge	$V_{DS} = 15 \text{ V}$, $I_D = 2.9 \text{ A}$, $V_{GS} = 4.5 \text{ V}$	2.4	3.0		nC
Q_{gs}	Gate-Source Charge	$V_{DS} = 15 \text{ V}$, $I_D = 2.9 \text{ A}$, $V_{GS} = 4.5 \text{ V}$	0.35			nC
Q_{gd}	Gate-Drain Charge	$V_{DS} = 15 \text{ V}$, $I_D = 2.9 \text{ A}$, $V_{GS} = 4.5 \text{ V}$	0.75			nC

Drain-Source Diode Characteristics and Maximum Ratings

I_S	Maximum Continuous Drain-Source Diode Forward Current	$T_J = 25^\circ\text{C}$	2.9			A
V_{SD}	Drain-Source Diode Forward Voltage	$I_S = 2.0 \text{ A}$, $T_J = 25^\circ\text{C}$	0.9	1.2		V
		$I_S = 1.1 \text{ A}$, $T_J = 85^\circ\text{C}$	0.8	1.2		V
t_r	Diode Reverse Recovery Time	$I_S = 2.9 \text{ A}$, $dI/dt = 100 \text{ A}/\mu\text{s}$	10			ns
Q_{rr}	Diode Reverse Recovery Charge	$I_S = 2.9 \text{ A}$, $dI/dt = 100 \text{ A}/\mu\text{s}$	2			nC

Schottky Diode Characteristics

I_S	Reverse Leakage	$V_S = 28 \text{ V}$, $T_J = 25^\circ\text{C}$	10	100		μA
		$T_J = 85^\circ\text{C}$	0.07	4.7		mA
V_f	Forward Voltage	$I_S = 1 \text{ A}$, $T_J = 25^\circ\text{C}$	0.50	0.57		V
		$T_J = 85^\circ\text{C}$	0.49	0.60		V
V_f	Forward Voltage	$I_S = 500 \text{ mA}$, $T_J = 25^\circ\text{C}$	0.40	0.46		V
		$T_J = 85^\circ\text{C}$	0.36	0.43		V

IP4359CX4



1.1 General description

The IP4359CX4 is a dual channel low capacitance ElectroStatic Discharge (ESD) protection device, providing protection to downstream components from ESD voltages as high as $\pm 15 \text{ kV}$ contact discharge and $> \pm 15 \text{ kV}$ air discharge according to the IEC 61000-4-2 model, far exceeding standard level 4.

The device is optimized for protection of high speed interfaces such as Universal Serial Bus (USB) 2.0, High Definition Multimedia Interface (HDMI), Digital Visual Interface (DVI) and other interfaces requiring very low capacitance ESD protection.

The device is available in two different heights, 0.61 mm and reduced maximum height of 0.5 mm. Both versions contain identical circuits and show an identical electrical performance. Both ESD protection channels share common ground connections, but are electrically separated, thereby preventing current back drive into the adjacent channel. IP4359CX4 is fabricated using monolithic silicon technology in a single Wafer-Level Chip-Scale Package (WLCSF). These features make the IP4359CX4 ideal for use in applications requiring component miniaturization such as mobile phone handsets and other portable electronic devices.

1.2 Features and benefits

- Pb-free, RoHS compliant and free of halogen and antimony (Dark Green compliant)
- 2 ultra low input capacity rail-to-rail ESD protection diodes with $C_{IO-QND} = 1.3 \text{ pF}$
- $R_{dyn} = 0.45 \Omega$
- Integrated ESD protection withstanding $\pm 15 \text{ kV}$ contact discharge and $> \pm 15 \text{ kV}$ air discharge, far exceeding IEC 61000-4-2 level 4
- Standard height version (0.61 mm) available as IP4359CX4/LF
- Reduced height version (maximum height of 0.5 mm) available as IP4359CX4/LF-H500
- 2×2 solder ball WLCSF with 0.4 mm pitch

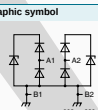
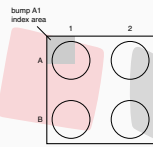
1.3 Applications

- High-speed interface ESD protection such as USB 2.0, HDMI, DVI etc.
- Interfaces with special requirements on low capacitive ESD protection
- Interfaces requiring separation of the positive clamping voltage/current path

2. Pinning information

Table 1. Pinning

Pin	Description	Simplified outline	Graphic symbol
A1 and A2	ESD protection		
B1 and B2	ground		



LIS331DL



MEMS motion sensor

3-axis $\pm 2g/\pm 8g$ smart digital output "nano" accelerometer

Features

- 2.16V to 3.6V supply voltage
- 1.8V compatible I/Os
- $< 1 \text{ mW}$ power consumption
- $\pm 2g/\pm 8g$ dynamically selectable full-scale
- I²C/SPI digital output interface
- Programmable interrupt generator
- Embedded click and double click recognition
- Embedded free-fall and motion detection
- Embedded high pass filter
- Embedded self test
- 1000g high shock survivability
- ECOPACK[®] RoHS and "Green" compliant (see Section 8)

Applications

- Free-Fall detection
- Motion activated functions
- Gaming and Virtual Reality input devices
- Vibration monitoring and compensation

Description

The LIS331DL is the smallest consumer low-power three axes linear accelerometer with digital output and smart embedded features. It includes a sensing element and an IC interface able to provide the measured acceleration to the external world through I²C/SPI serial interface. The sensing element, capable of detecting the acceleration, is manufactured using a dedicated process developed by ST to produce inertial sensors and actuators in silicon.

The IC interface is manufactured using a CMOS process that allows to design a dedicated circuit which is trimmed to better match the sensing element characteristics.

The LIS331DL has dynamically user selectable full scales of $\pm 2g/\pm 8g$ and it is capable of measuring accelerations with an output data rate of 100Hz or 400Hz.

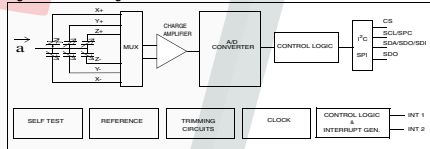
A self-test capability allows the user to check the functioning of the sensor in the final application.

The device may be configured to generate inertial wake-up/free-fall interrupt signals when a programmable acceleration threshold is crossed at least in one of the three axes. Thresholds and timing of interrupt generators are programmable by the end user on the fly.

The LIS331DL is available in plastic Land Grid Array package (LGA) and it is guaranteed to operate over an extended temperature range from -40°C to $+85^\circ\text{C}$.

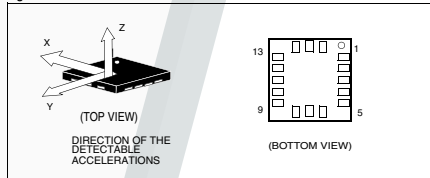
1.1 Block diagram

Figure 2. Block diagram



1.2 Pin description

Figure 3. Pin connection



LTC3459



FEATURES

- Small Solution Size
- $> 85\%$ Efficiency over Wide Load Range
- Internal Synchronous Rectifier
- V_{IN} Range: 1.5V to 5.5V
- 5V at 30mA from 3.3V Input
- 3.3V at 20mA from 2.0V Cell Input
- Programmable Output Voltages Up to 10V
- Burst Mode[®] Operation
- Inrush Current Limiting
- Output Disconnect in Shutdown
- Ultralow Quiescent (10 μA) and Shutdown ($< 1 \mu\text{A}$) Currents
- Low Profile (1mm) SOT-23 Package

APPLICATIONS

- General Purpose Micropower Boost
- Digital Cameras
- PDAs
- LCD Bias
- Small OLED Displays
- Supercap Charging

DESCRIPTION

The LTC[®]3459 is a low current, high efficiency synchronous boost converter intended for low power, size constrained portable applications. The LTC3459 can be powered from a single lithium ion battery, a 2- to 3-cell stack of Alkaline or Nickel batteries, or any low impedance voltage source between 1.5V and 5.5V. The output is programmable via an external divider between 2.5V and 10V. Although the part is primarily intended for boost applications, V maintain regulation below V

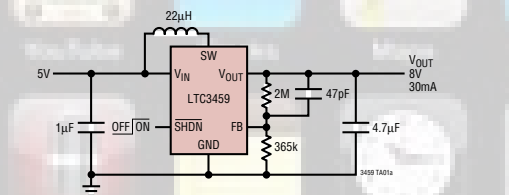
The LTC3459 offers Burst Mode operation with a fixed peak current, providing high conversion efficiency over a wide range of load currents. During start-up, inductor current is controlled preventing the inrush surge current found in many boost converters. In shutdown the output is disconnected from the input and quiescent current is reduced to $< 1 \mu\text{A}$.

The LTC3459 is offered in a low profile (1mm) 6-pin SOT-23 (ThinSOT) the total solution.

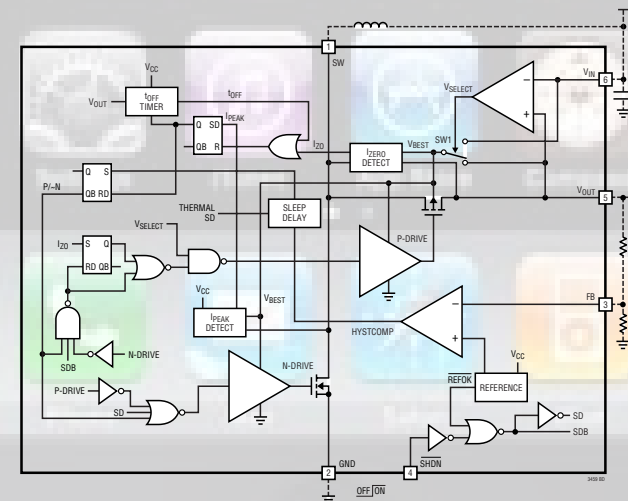
LTC and LT are registered trademarks of Linear Technology Corporation. Burst Mode is a registered trademark of Linear Technology Corporation. ThinSOT is trademark of Linear Technology Corporation.

TYPICAL APPLICATION

5V to 8V Converter



BLOCK DIAGRAM



اطلاعات فنی برخی از آی سی های بکار رفته در گوشی



IPHONE

3GS



SKY77340 PA Module for Quad-Band GSM / EDGE

SKYWORKS®

Applications

- Quad-band cellular handsets:
 - GSM Modulation
 - Class 4 GSM850/900
 - Class 1 DCS1800/PCS1900
 - Class 12 GPRS multi-slot operation
- EDGE modulation
 - Class E2 GSM850/900
 - Class E2 DCS1800/PCS1900

Features

- High efficiency:
 - GSM850 54%
 - GSM900 53%
 - DCS 52%
 - PCS 52%
- Input/Output matching 50 Ω internal (with DC blocking)
- 16-pin MCM
- Small outline
 - 6 x 8 mm
- Low profile
 - 1.2 mm
- Gold-plated, lead-free contacts
- Low APC current
 - 10 μ A

NEW Skyworks offers lead (Pb)-free "environmentally friendly" packaging that is RoHS compliant (European Parliament for the Restriction of Hazardous Substances).

Description
The SKY77340 Power Amplifier Module (PAM) is designed in a compact form factor for quad-band cellular handsets comprising GSM850/900, DCS1800, PCS1900, supporting GSMK and linear EDGE modulation. Class 12 General Packet Radio Service (GPRS) multi-slot operation is also supported. The module consists of a GSM850/900 PA block and a DCS1800/PCS1900 PA block, impedance-matching circuitry for 50 Ω input and output impedances, and a Multi-function Power Amplifier Control (MFC) block. A custom CMOS integrated circuit provides the internal MFC function and interface circuitry.

Two separate Heterojunction Bipolar Transistor (HBT) PA blocks are fabricated onto InGaP die; one supports the GSM850/900 bands, the other supports the DCS1800 and PCS1900 bands. Both PA blocks share common power supply pins to distribute current. The InGaP die, the silicon die, and the passive components are mounted on a multi-layer laminate substrate. The assembly is encapsulated with plastic overmold.

RF input and output ports are internally matched to 50 Ω to reduce the number of external components. Extremely low leakage current (2.5 μ A typical) maximizes handset standby time. Band select (BS) circuitry selects GSM transmit frequency band (logic 0) and DCS/PCS transmit frequency band (logic 1). MODE circuitry selects GSMK modulation (logic 0) or EDGE modulation (logic 1). VRAMP controls the output power for GSMK modulation and provides bias optimization for EDGE modulation depending on the state of MODE control.

The integrated multi-function control (MFC) provides envelope amplitude control in GSMK mode, reducing sensitivity to input drive, temperature, power supply, and process variation. In EDGE mode, the MFC configures the PA for fixed gain, and provides the ability to optimize the PA bias operation at different power levels. This circuitry regulates PA bias conditions, reducing sensitivity to temperature, power supply, and process variation. The Enable input signal (pin 8) provides a standby state to minimize battery drain.

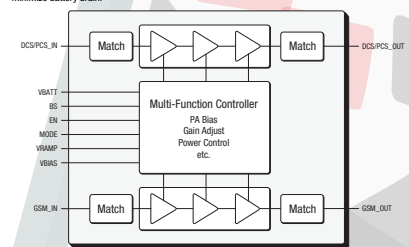


Figure 1. SKY77340 Functional Block Diagram

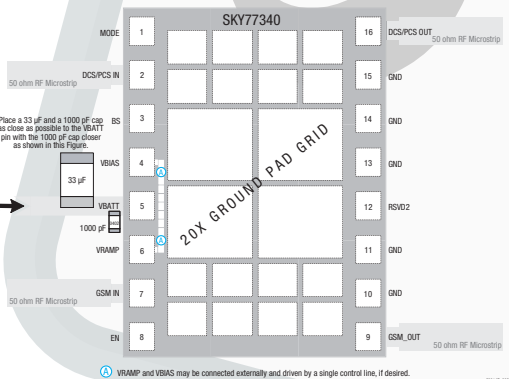
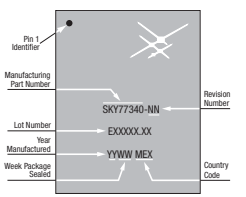


Figure 2. Typical SKY77340 Application Circuit



PESDxL5UF; PESDxL5UV; PESDxL5UY



Low capacitance unidirectional fivefold ESD protection diode arrays

1. Product profile

1.1 General description

Low capacitance unidirectional fivefold ElectroStatic Discharge (ESD) protection diode arrays in small Surface-Mounted Device (SMD) plastic packages designed to protect up to five unidirectional signal lines from the damage caused by ESD and other transients.

Table 1. Product overview

Type number	Package	JEITA	JEDEC	Package configuration
PESD3V3LSUF	SOT886	-	MO-252	leadless ultra small
PESD5V0LSUF	SOT886	-	MO-252	leadless ultra small
PESD3V3LSUV	SOT666	-	-	ultra small and flat lead
PESD5V0LSUV	SOT666	-	-	ultra small and flat lead
PESD3V3LSUY	SOT363	SC-88	-	very small
PESD5V0LSUY	SOT363	SC-88	-	very small

1.2 Features

- ESD protection of up to five lines
- Low diode capacitance
- Max. peak pulse power: $P_{PP} = 25$ W
- Low clamping voltage: $V_{CL} = 12$ V
- Ultra low leakage current: $I_{LW} = 5$ nA
- ESD protection up to 20 kV
- IEC 61000-4-2; level 4 (ESD)
- IEC 61000-4-5 (surge); $I_{PP} = 2.5$ A

1.3 Applications

- Computers and peripherals
- Audio and video equipment
- Cellular handsets and accessories
- Communication systems
- Portable electronics
- Subscriber Identity Module (SIM) card protection

2. Pinning information

Table 3. Pinning

Pin	Description	Simplified outline	Symbol
PESD3V3LSUF; PESD5V0LSUF			
1	cathode (diode 1)		 000aaaz150
2	common anode		
3	cathode (diode 2)		
4	cathode (diode 3)		
5	cathode (diode 4)		
6	cathode (diode 5)		
PESD3V3LSUV; PESD5V0LSUV			
1	cathode (diode 1)		 000aaaz150
2	common anode		
3	cathode (diode 2)		
4	cathode (diode 3)		
5	cathode (diode 4)		
6	cathode (diode 5)		

The devices are designed for the protection of up to five unidirectional data or signal lines from the damage caused by ESD and surge pulses. The devices may be used on lines where the signal polarities are both, positive and negative with respect to ground. The devices provide a surge capability of 25 W per line for an 8/20 μ s waveform each.



Fig 9. Typical application for unidirectional application of five lines

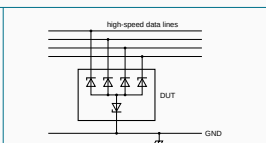


Fig 10. Typical application for bidirectional application of four lines

Circuit board layout and protection device placement

Circuit board layout is critical for the suppression of ESD, Electrical Fast Transient (EFT) and surge transients. The following guidelines are recommended:

1. Place the device as close to the input terminal or connector as possible.
2. The path length between the device and the protected line should be minimized.
3. Keep parallel signal paths to a minimum.
4. Avoid running protected conductors in parallel with unprotected conductors.
5. Minimize all Printed-Circuit Board (PCB) conductive loops including power and ground loops.
6. Minimize the length of the transient return path to ground.
7. Avoid using shared transient return paths to a common ground point.
8. Ground planes should be used whenever possible. For multilayer PCBs, use ground vias.



IPHONE 3G



IPHONE

3G



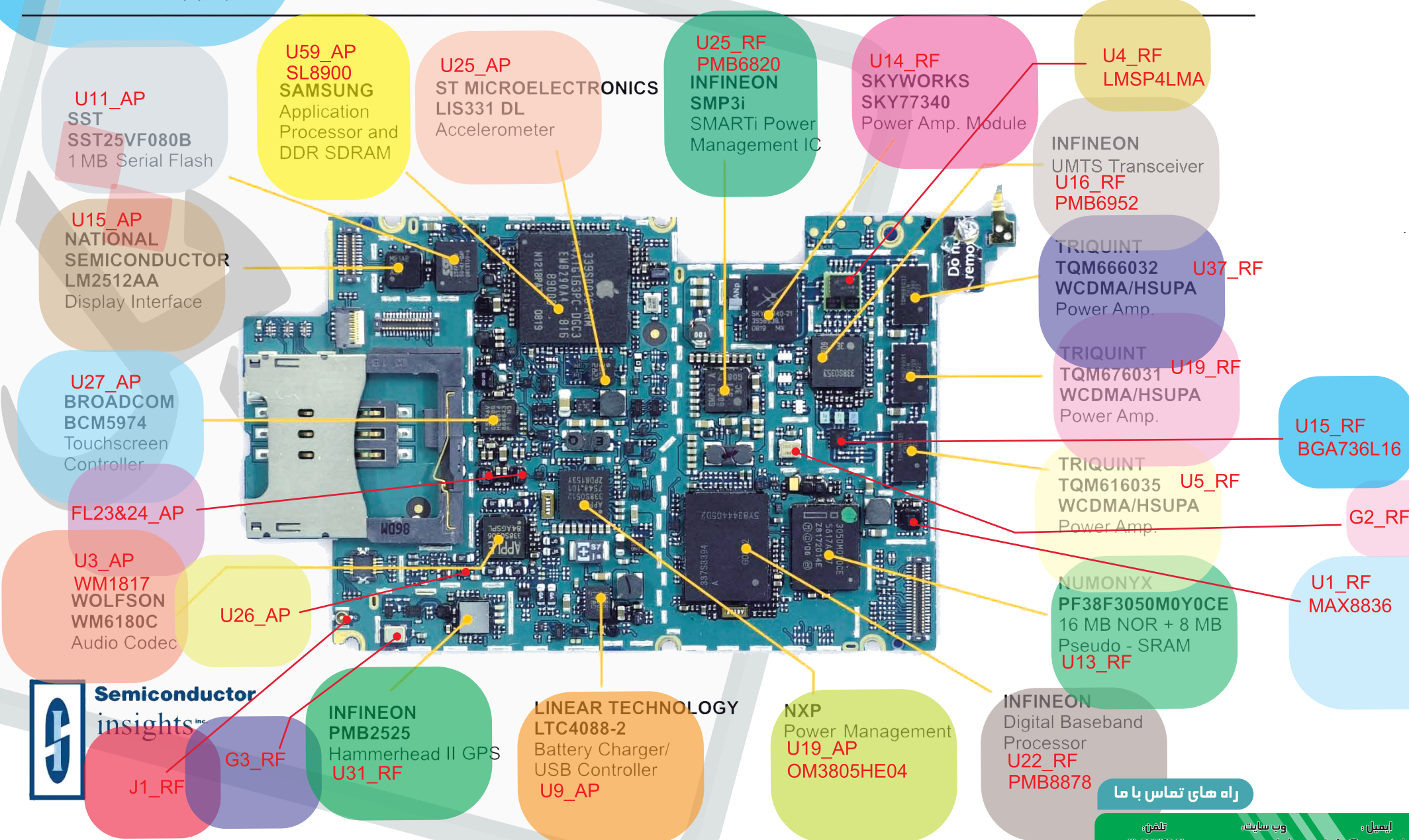
همانطور که قبلاً در نقشه گوشی 3G5 اشاره شد COMPONENT PLACING گوشی IPHONE 3G فعلاً موجود نیست و چون وجود این بخش از شمایک برای مشخص کردن جایگاه قطعات بر روی برد الزامیست لذا در نبود COMPONENT PLACING برای پیدا کردن قطعات می توانیید تا حد زیادی از برد 3G5 استفاده نمایید و یا همانگونه که در شکل مشخص می باشد شماره قطعاتی را که برای نمونه آورده شده است را کالیست جستجو نمایند تا به شمایک آن دست پیدا کنید.

پانتهل اکنون بازسازی COMPONENT PLACING این گوشی (3G) و IPHONE 4 را در دست اقدام دارد و به محض تکمیل ، در دسترس همگان قرار خواهد گرفت. در ضمن اطلاعات فنی برخی از آی سی های استفاده شده در این گوشی در انتهای بخش 3G قرار دارد که می توانیید با مراجعه به آنها از این اطلاعات سودمند بهره ببرید.

U4_RF	U5_RF	U19_AP	U26_AP	U11_AP
U14_RF	U15_RF	U22_RF	J1_RF	U15_AP
U25_RF	U19_RF	U13_RF	G3_RF	U27_AP
U25_AP	U37_RF	U1_RF	U31_RF	FL23&24_AP
U59_AP	U16_RF	G2_RF	U9_AP	U3_AP



IPHONE 3G



راه های تماس با ما

ایمیل: Info@panatel.org
وب سایت: www.panatel.org
تلفن: ۰۲۱-۶۶۷۶۶۹۱
۰۲۱-۶۶۷۶۶۷۹
پیام کوتاه: ۲۰۰۹۵۴۳



Semiconductor
insights^{inc.}



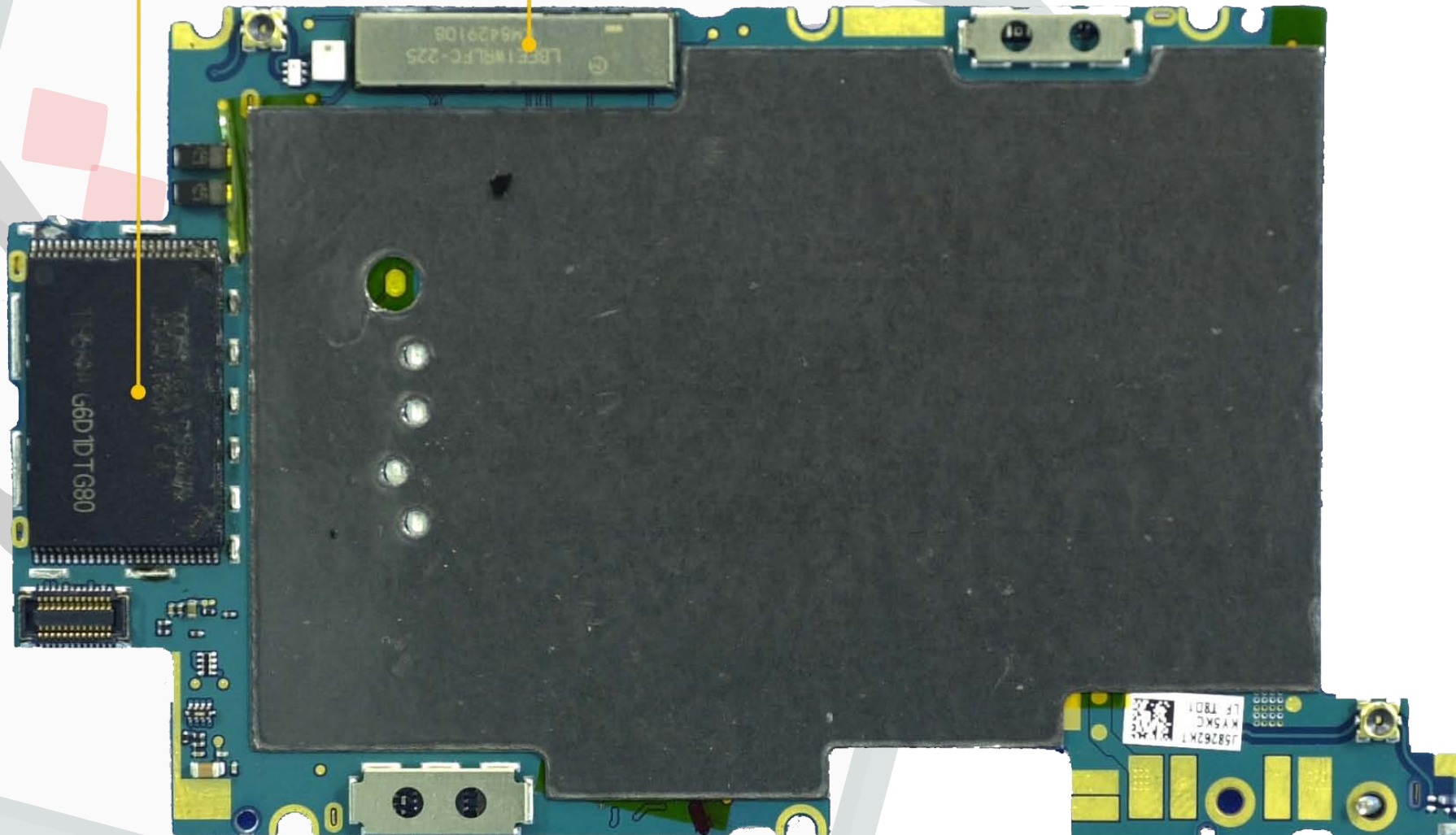
IPHONE

3G



TOSHIBA
TH58G6D1DTG80
8GB Flash

MARVELL
88W8686
and CSR Bluetooth



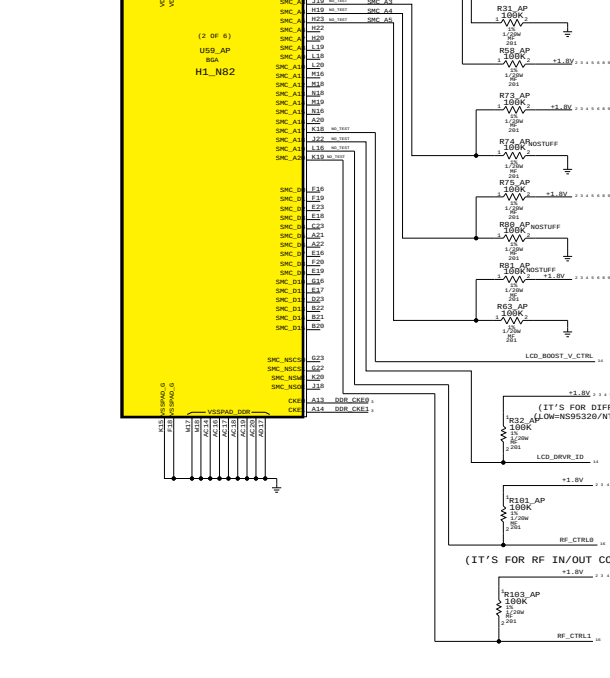
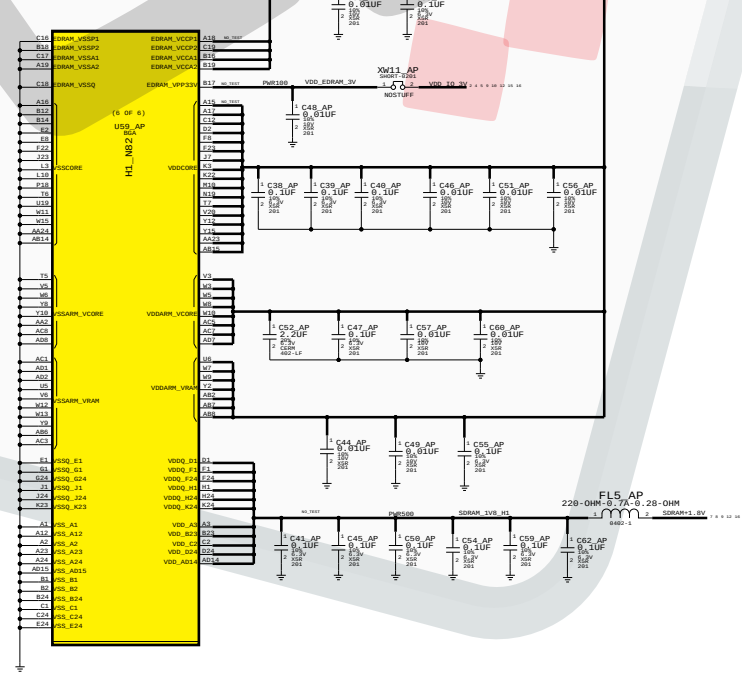
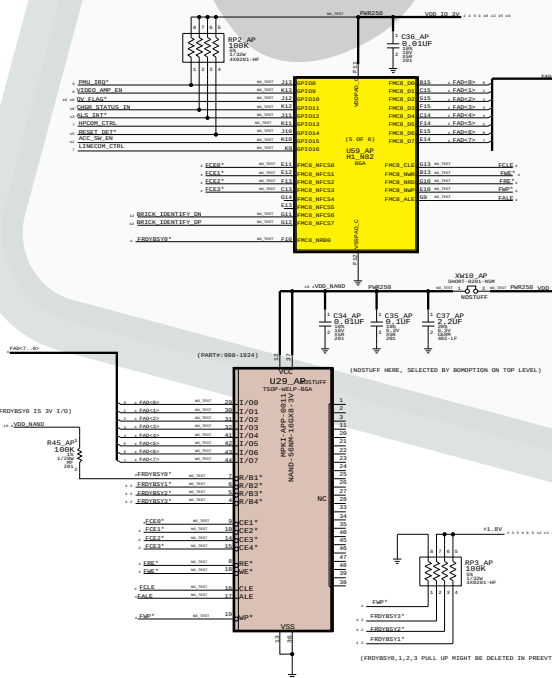


IPHONE

3G



NAND FLASH & GPIO



THE 3 LSB ADDRESSES ARE USED FOR A PRODUCT ID

PID1	PID0	DEV	DESCRIPTION
(SMC_A2)	(SMC_A1)	(SMC_A0)	
0	0	0	M68, AP, MLB
0	0	1	M68, AP, DEV
0	1	0	N45, MLB
0	1	1	N45, DEV
1	0	0	N82, MLB
1	0	1	N82, DEV
1	1	0	EXTEND PROJECT, MLB
1	1	1	EXTEND PROJECT, DEV

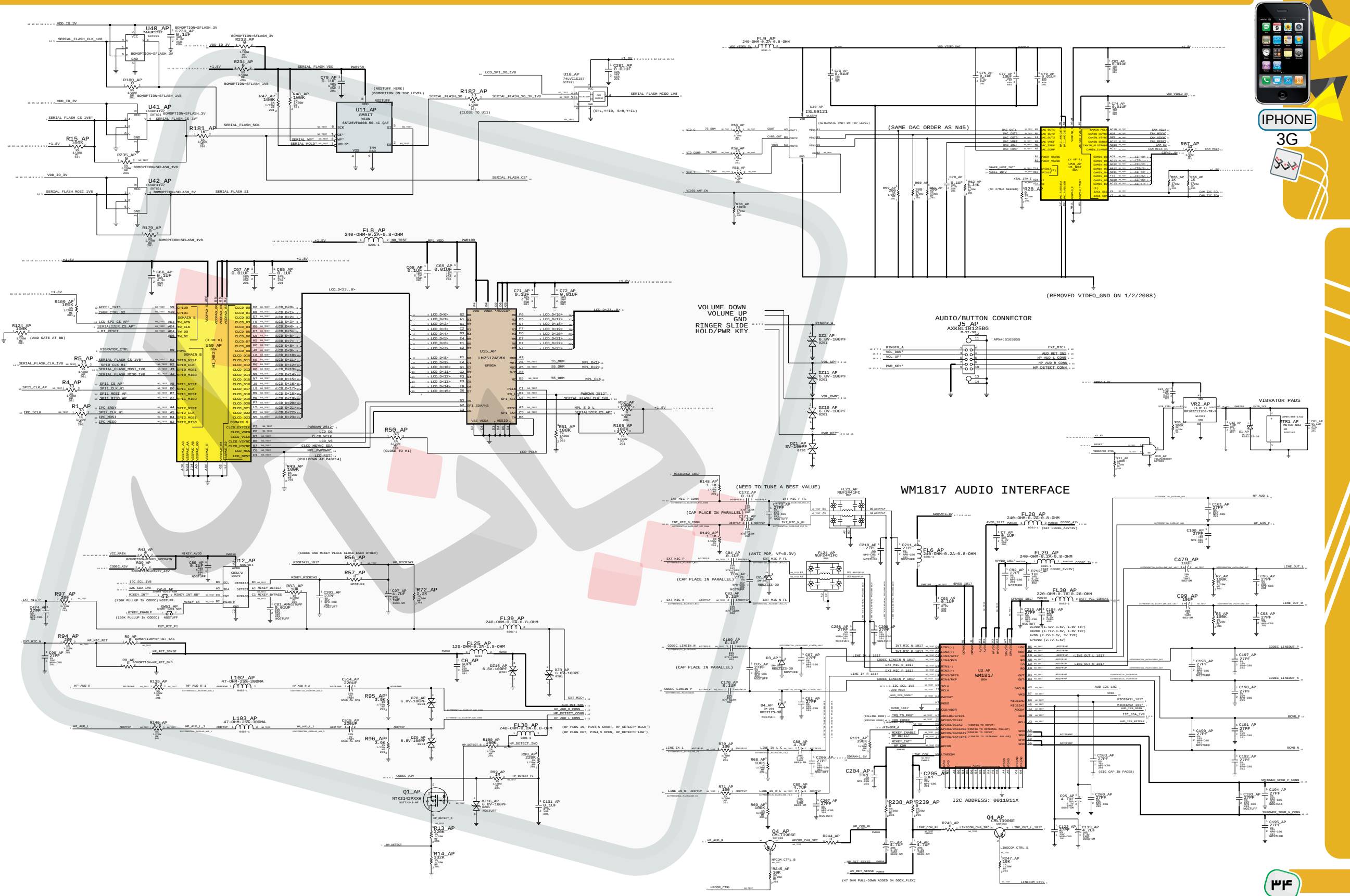
THE 3 BITS ADDRESSES ARE USED FOR A PRODUCT VERSION

SMC_A5	SMC_A4	SMC_A3	DESCRIPTION
1	1	1	PROT02
1	1	0	PROT03
1	0	1	EVT1
1	0	0	EVT2
0	1	1	EVT3
0	1	0	?
0	0	1	?
0	0	0	PVT



IPHONE

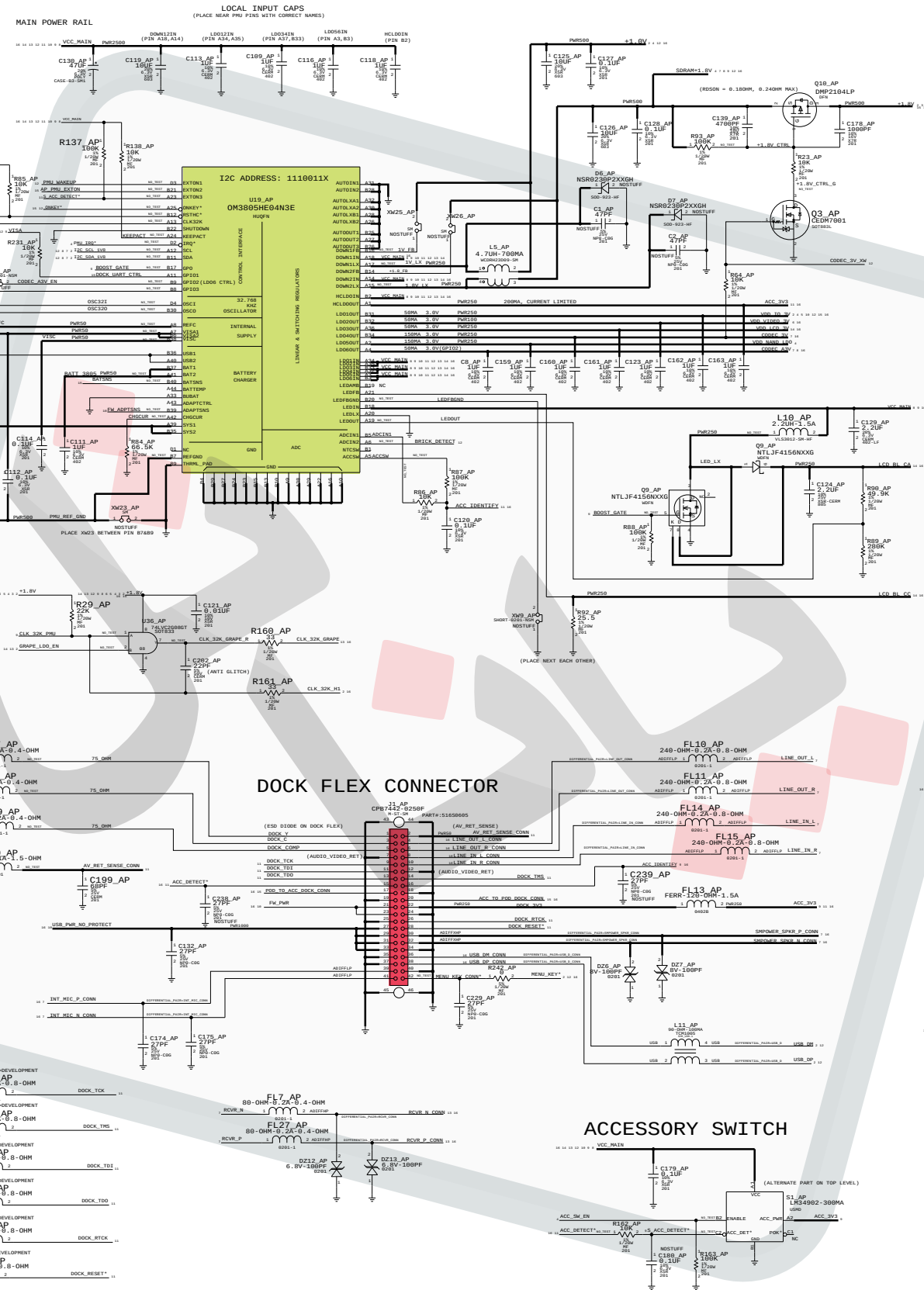
3G





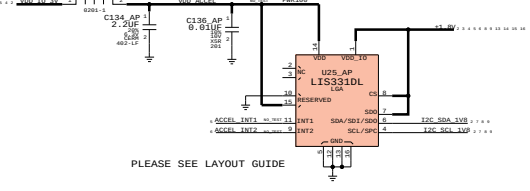
IPHONE

3G

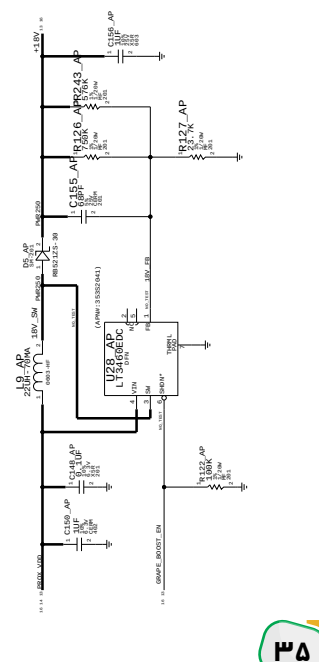
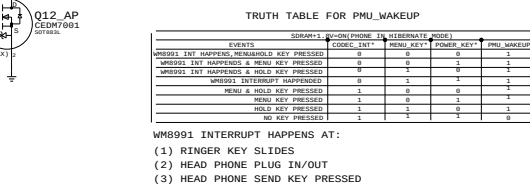
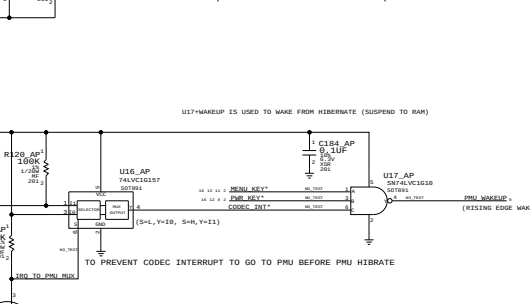
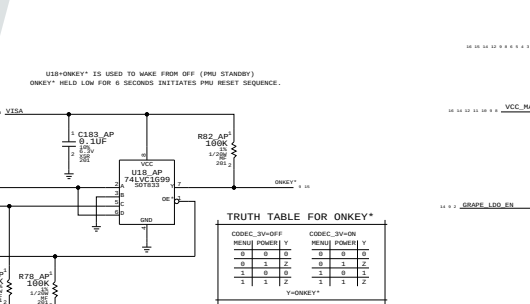
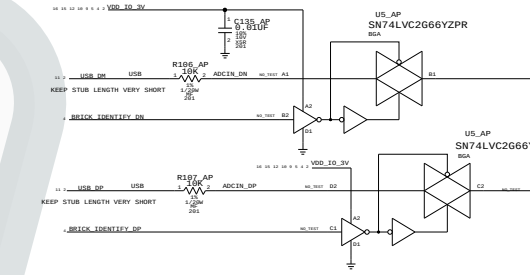


ACCELEROMETER

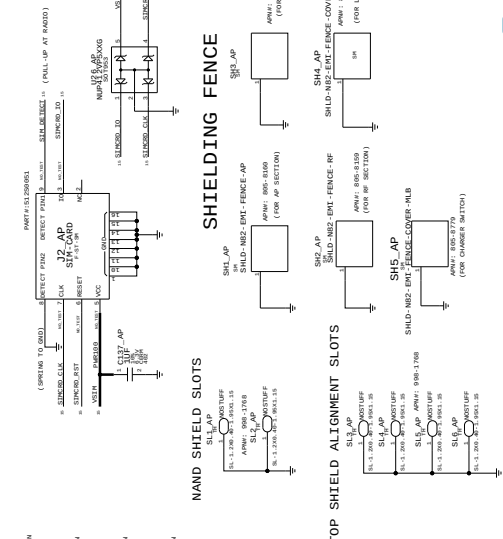
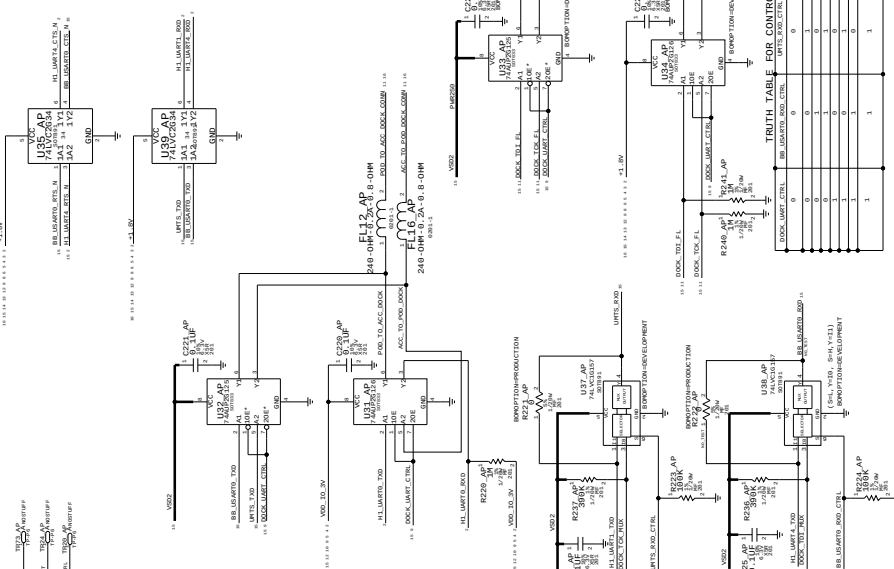
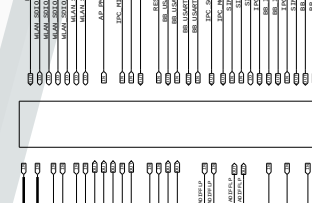
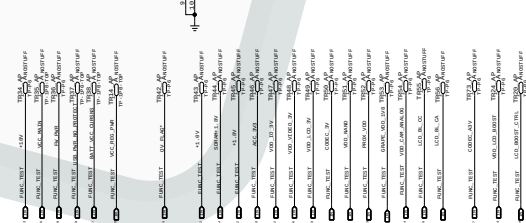
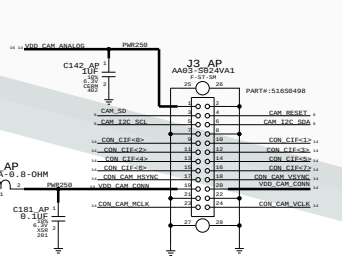
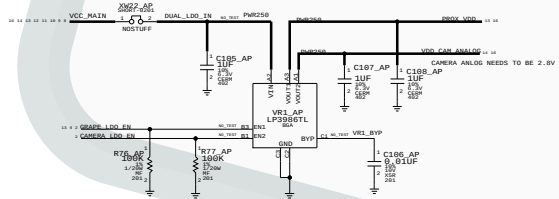
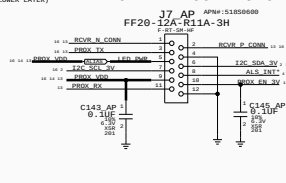
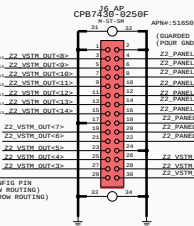
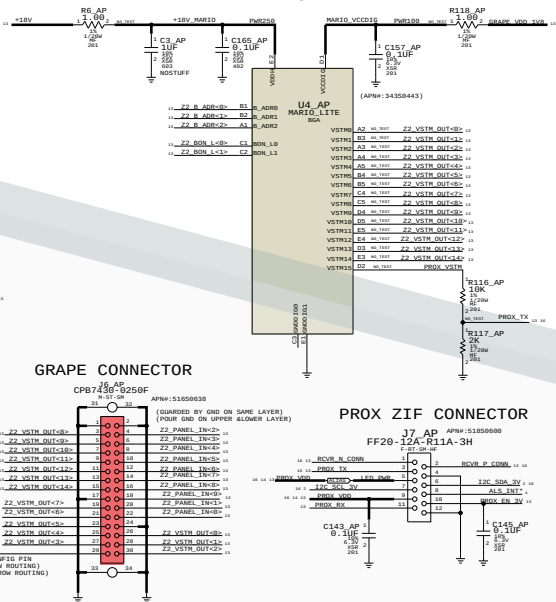
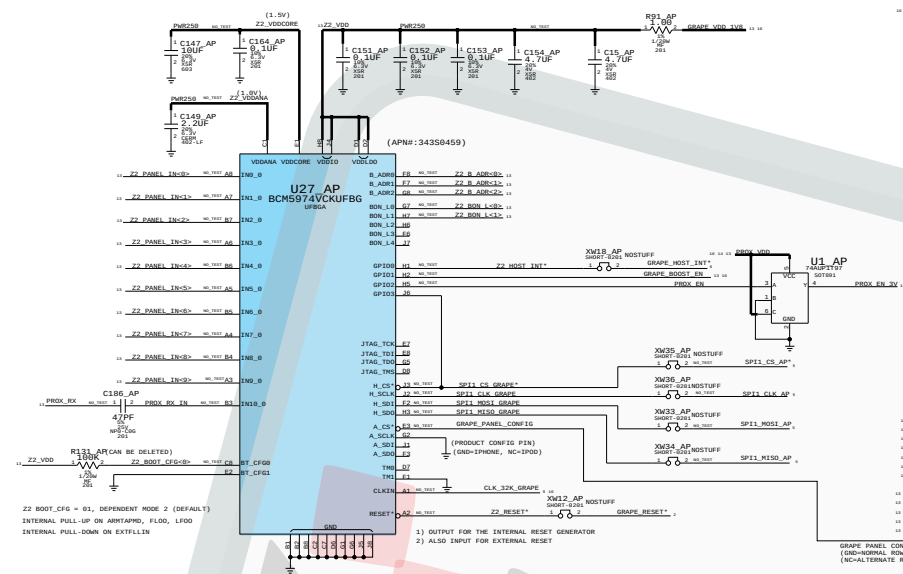
I2C ADDRESS: 0011101



ADAPTER CURRENT CAPACITY DETECTION



(PLACE THESE INDUCTOR CLOSE TO DOCK CONNECTOR)



شماراتیک های مربوط به طبقه تلفن

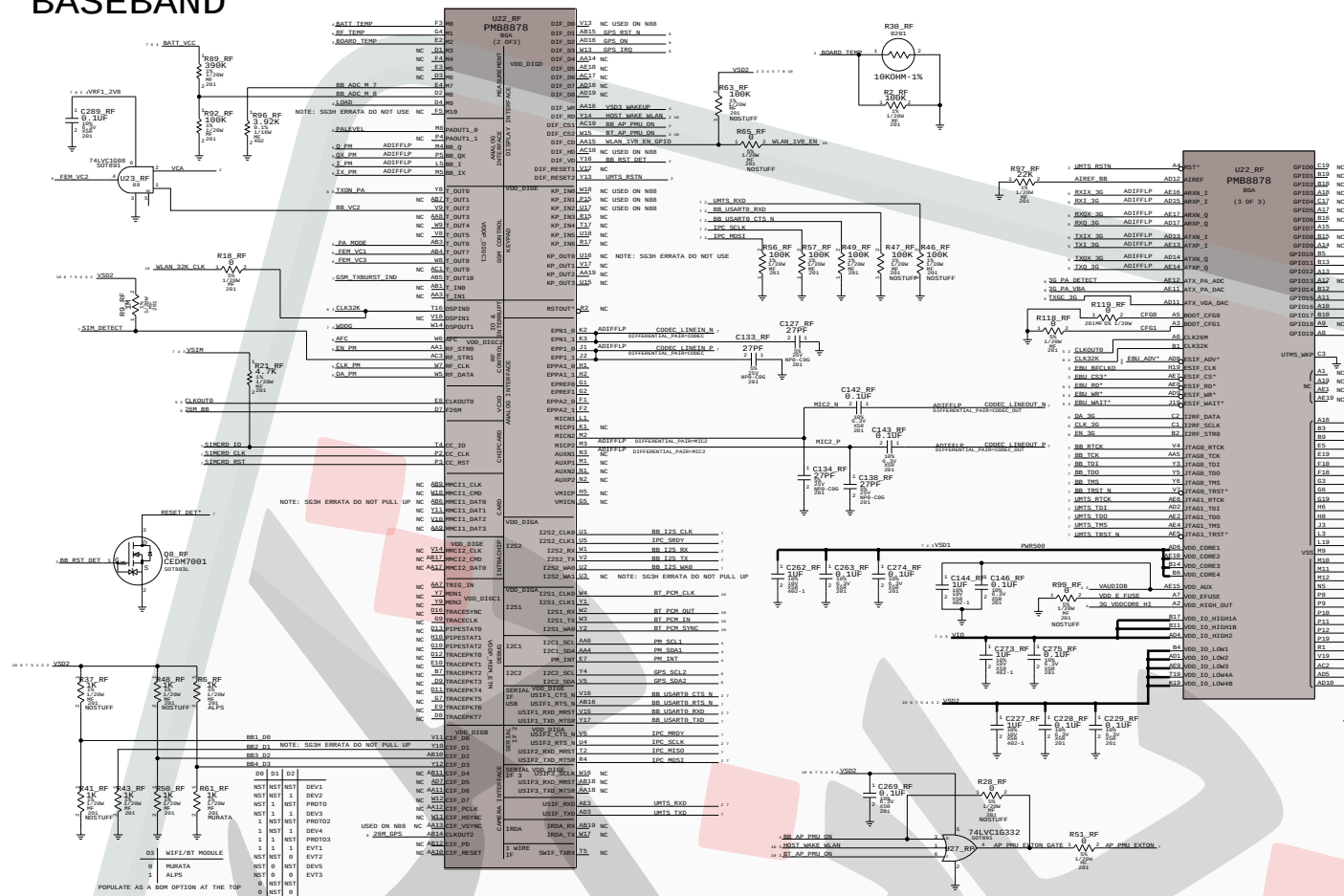


IPHONE

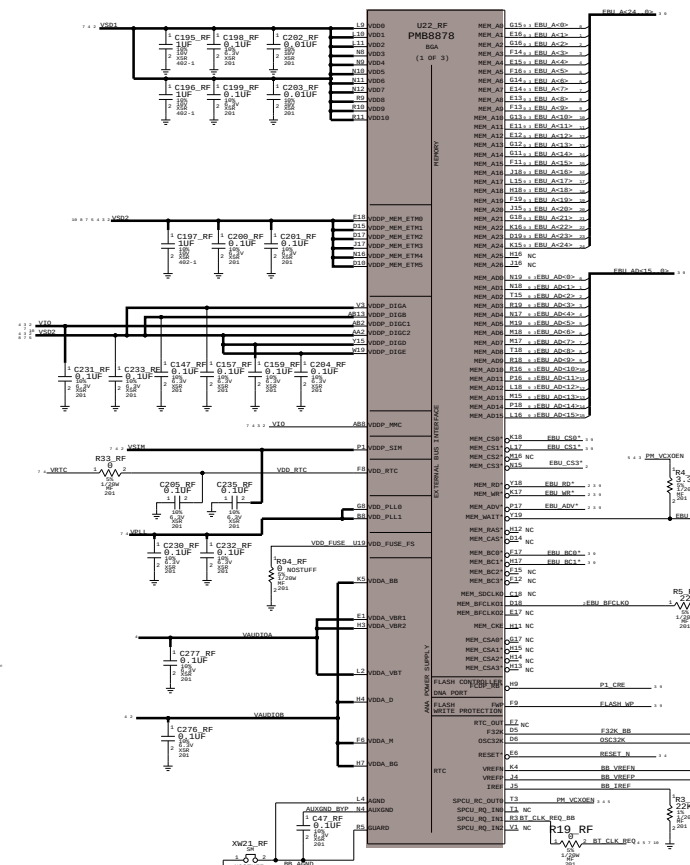
3G



BASEBAND



BASEBAND/RADIO MEM

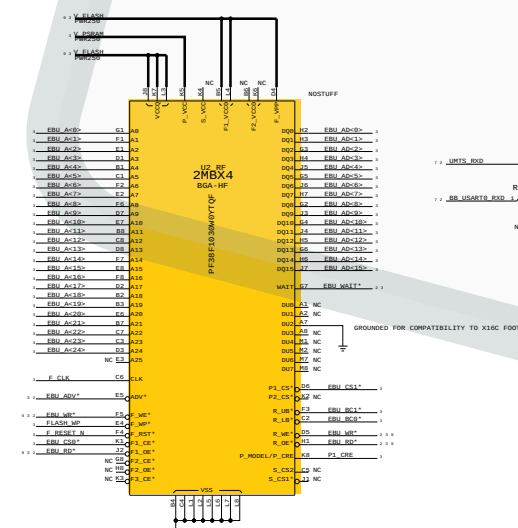


SYSTEM CONNECTORS

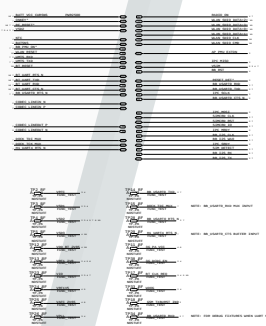
DEBUG CONNECTOR

516S0612

DUAL FOOTPRINTED LOW-COST MEMORY OPTION



AP CONNECTIONS



IPHONE

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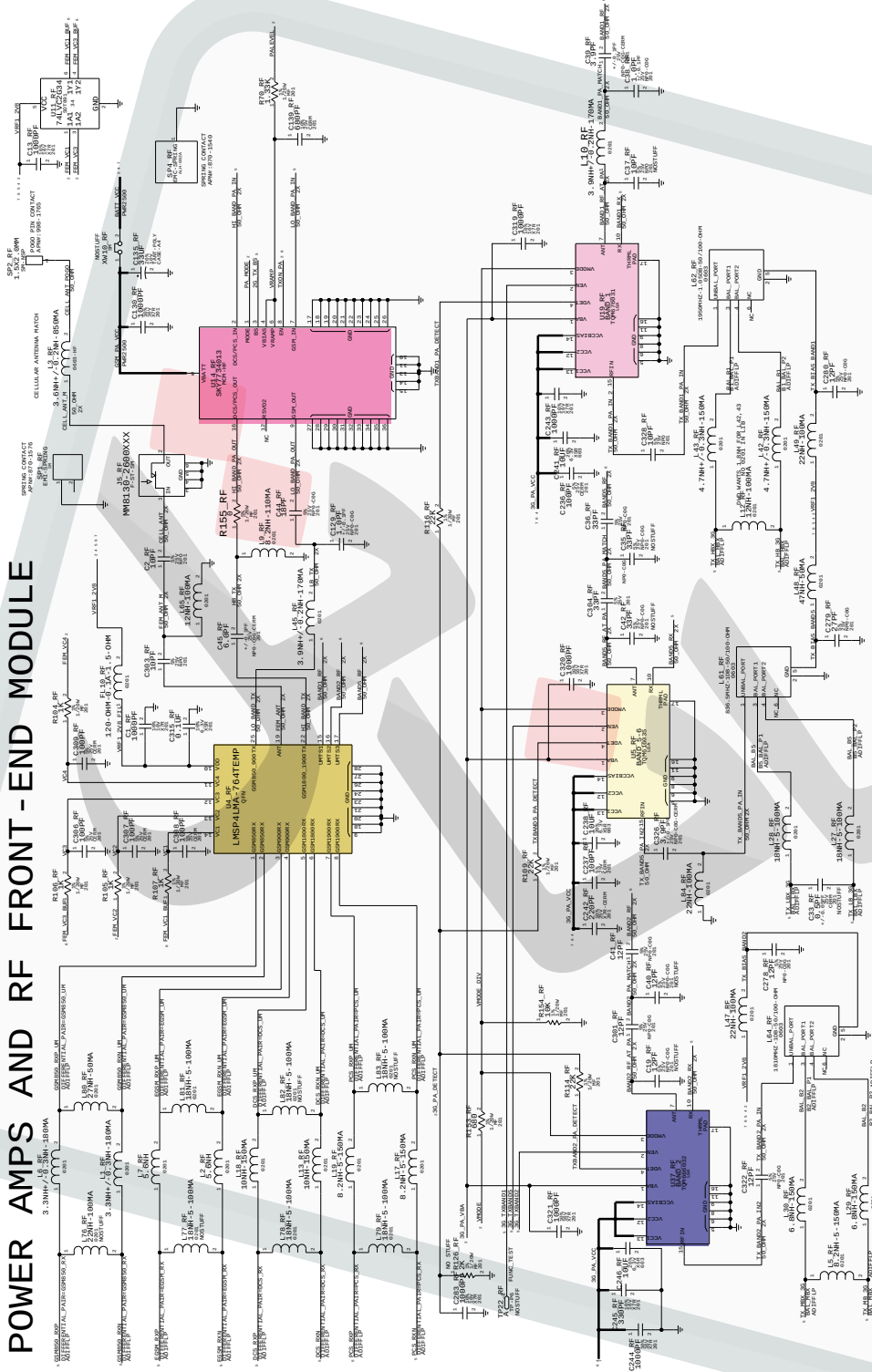
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3G

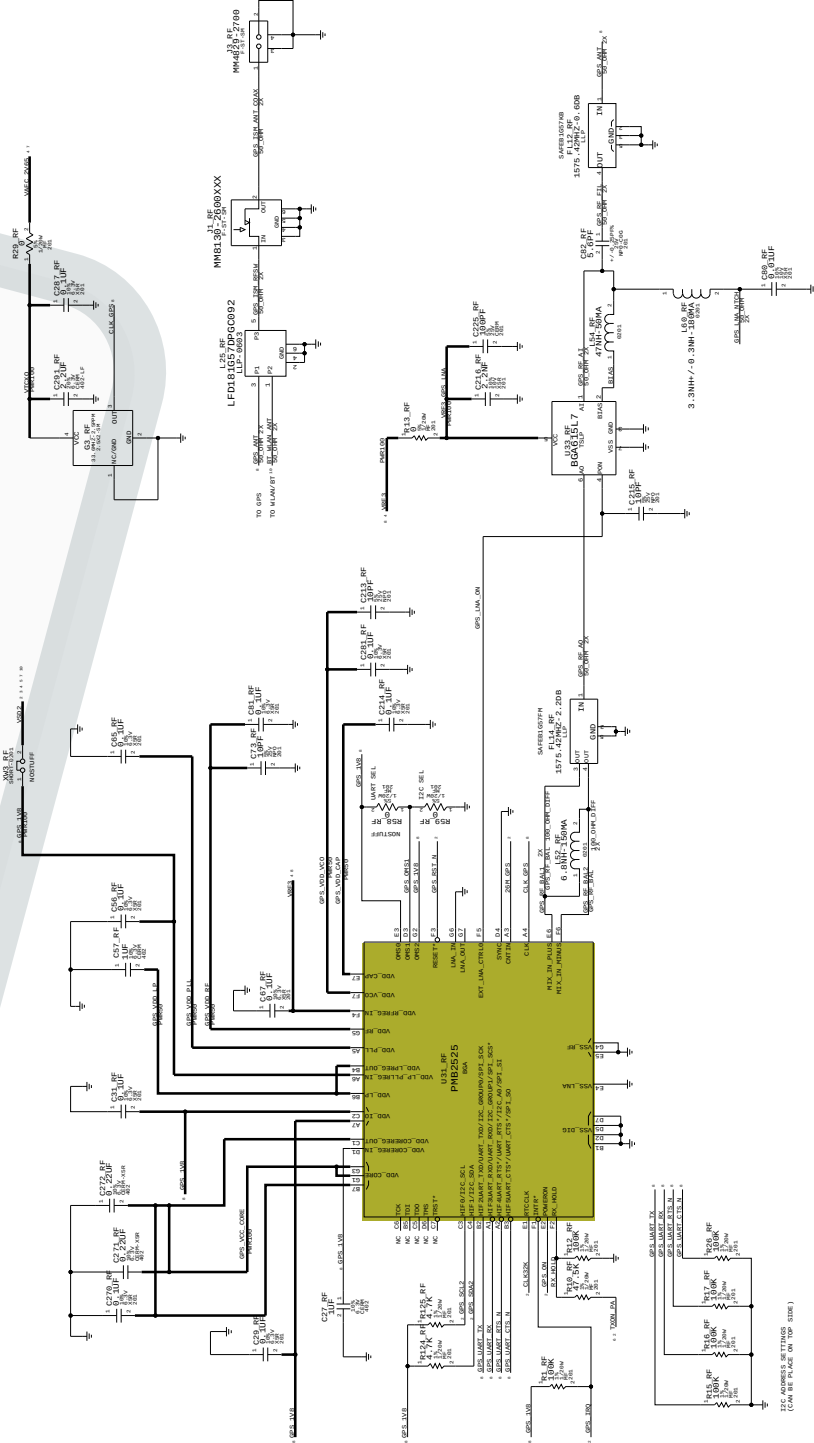
3G

3G

POWER AMPS AND RF FRONT-END MODULE



A-GPS



IPHONE

3G



تصاویر مربوط به بازوبسته کردن آیفون 3G



IPHONE

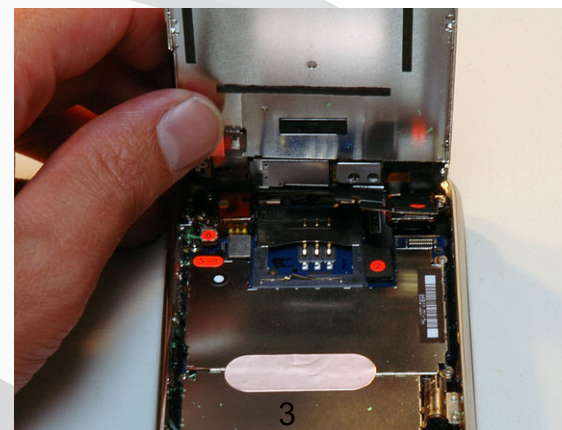
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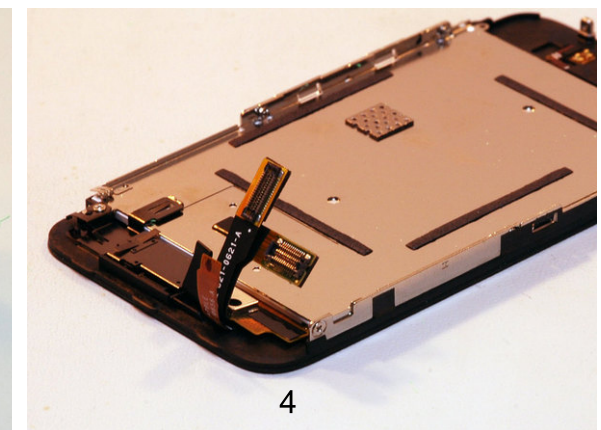
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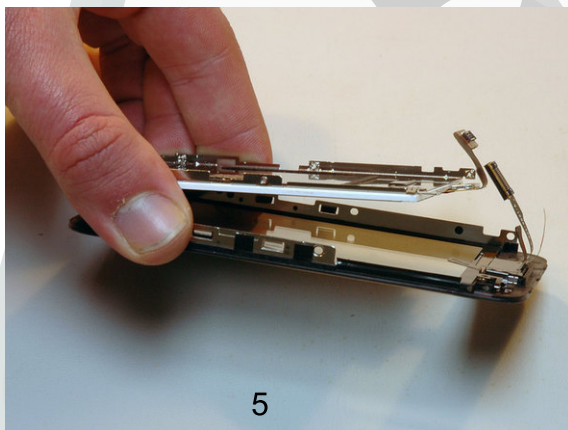
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3



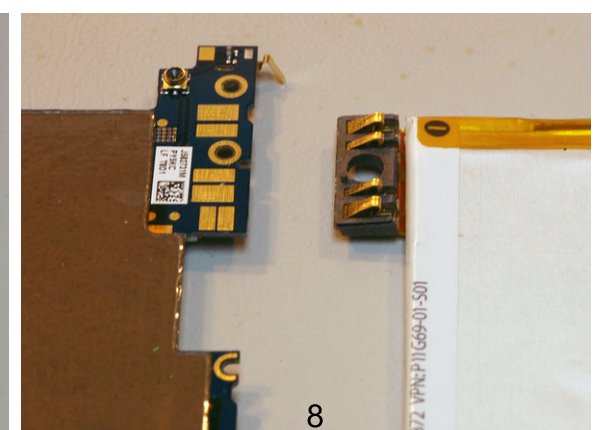
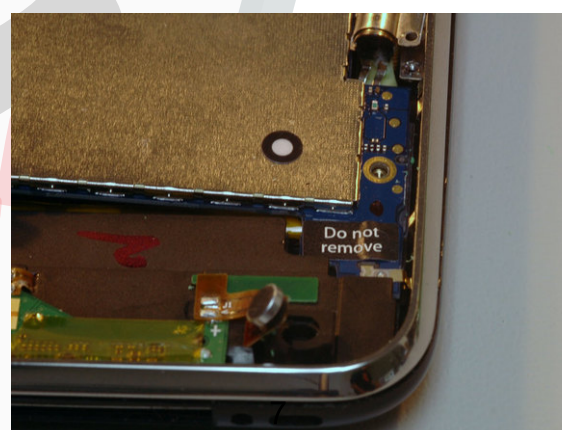
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5



6



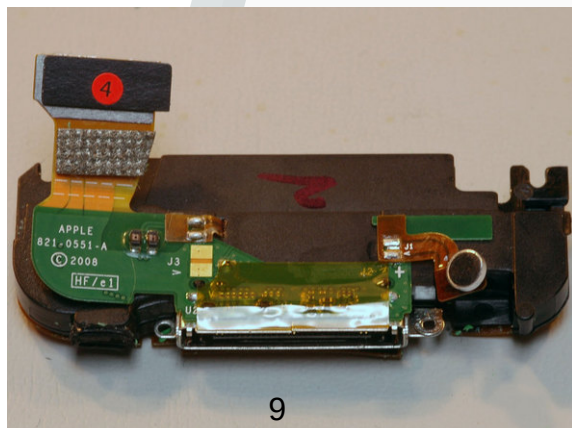
8

تصاویر مربوط به بازوبسته کردن آیفون 3G

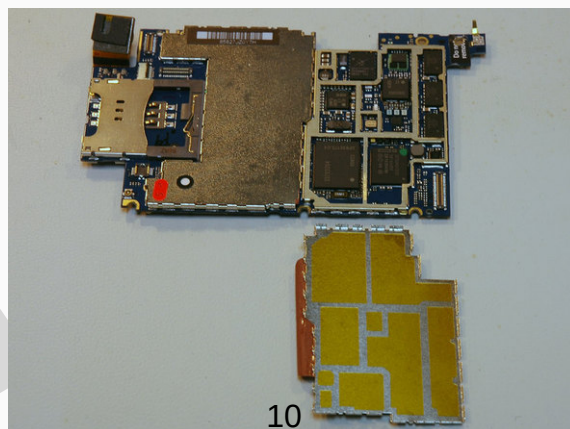


IPHONE

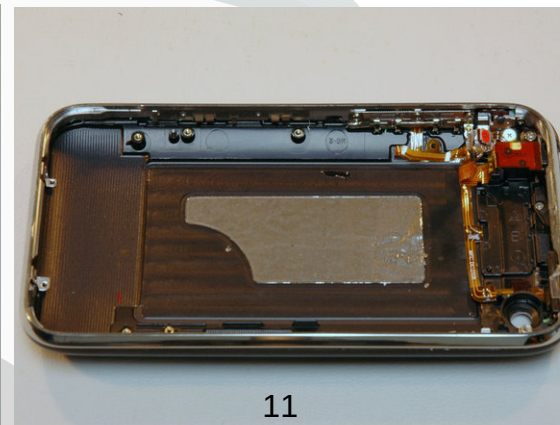
3G



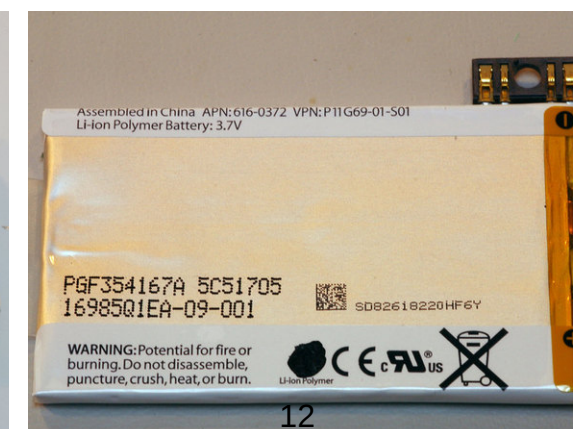
9



10



11



12



راه های تماس با ما

تلفن:
۰۲۱-۶۶۷۴۶۰۹۱
۰۲۱-۶۶۷۴۶۰۷۹

وبسایت:
www.panatel.org
Info@panatel.org

ایمیل:

پیام کوتاه:
۲۰۰۰۹۵۴۳

اطلاعات فنی برخی از آی سی های بکار رفته در گوشی



IPHONE

3G



SST25VF080B

8 Mbit SPI Serial Flash

FEATURES:

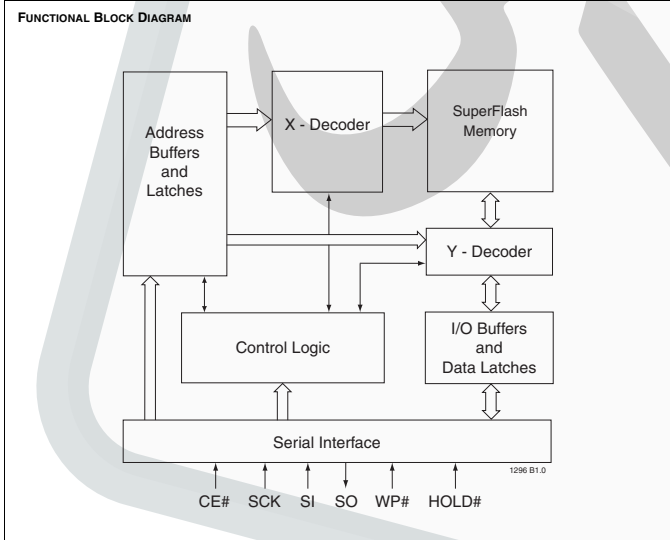
- **Single Voltage Read and Write Operations**
 - 2.7-3.6V
- **Serial Interface Architecture**
 - SPI Compatible: Mode 0 and Mode 3
- **High Speed Clock Frequency**
 - 50 MHz
- **Superior Reliability**
 - Endurance: 100,000 Cycles (typical)
 - Greater than 100 years Data Retention
- **Low Power Consumption:**
 - Active Read Current: 10 mA (typical)
 - Standby Current: 5 µA (typical)
- **Flexible Erase Capability**
 - Uniform 4 KByte sectors
 - Uniform 32 KByte overlay blocks
 - Uniform 64 KByte overlay blocks
- **Fast Erase and Byte-Program:**
 - Chip-Erase Time: 35 ms (typical)
 - Sector-/Block-Erase Time: 18 ms (typical)
 - Byte-Program Time: 7 µs (typical)
- **Auto Address Increment (AAI) Programming**
 - Decrease total chip programming time over Byte-Program operations
- **End-of-Write Detection**
 - Software polling the BUSY bit in Status Register
 - Busy Status readout on SO pin in AAI Mode
- **Hold Pin (HOLD#)**
 - Suspends a serial sequence to the memory without deselecting the device
- **Write Protection (WP#)**
 - Enables/Disables the Lock-Down function of the status register
- **Software Write Protection**
 - Write protection through Block-Protection bits in status register
- **Temperature Range**
 - Commercial: 0°C to +70°C
 - Industrial: -40°C to +85°C
- **Packages Available**
 - 8-lead SOIC (200 mils)
 - 8-contact WSON (6mm x 5mm)
- **All non-Pb (lead-free) devices are RoHS compliant**

PRODUCT DESCRIPTION

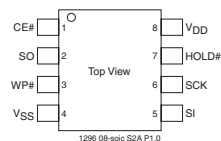
SST's 25 series Serial Flash family features a four-wire, SPI-compatible interface that allows for a low pin-count package which occupies less board space and ultimately lowers total system costs. The SST25VF080B devices are enhanced with improved operating frequency and even lower power consumption than the original SST25VFxxA devices. SST25VF080B SPI serial flash memories are manufactured with SST's proprietary, high-performance CMOS SuperFlash technology. The split-gate cell design and thick-oxide tunneling injector attain better reliability and manufacturability compared with alternate approaches.

The SST25VF080B devices significantly improve performance and reliability, while lowering power consumption. The devices write (Program or Erase) with a single power supply of 2.7-3.6V for SST25VF080B. The total energy consumed is a function of the applied voltage, current, and time of application. Since for any given voltage range, the SuperFlash technology uses less current to program and has a shorter erase time, the total energy consumed during any Erase or Program operation is less than alternative flash memory technologies.

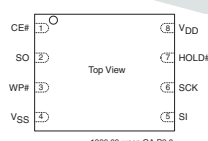
The SST25VF080B device is offered in both 8-lead SOIC (200 mils) and 8-contact WSON (6mm x 5mm) packages. See Figure 1 for pin assignments.



PIN DESCRIPTION



8-LEAD SOIC



8-CONTACT WSON

SN74LVC2G66

DUAL BILATERAL ANALOG SWITCH

FEATURES

- Available in the Texas Instruments NanoStar™ and NanoFree™ Packages
- 1.65-V to 5.5-V V_{CC} Operation
- Inputs Accept Voltages to 5.5 V
- Max t_{pd} of 0.8 ns at 3.3 V
- High On-Off Output Voltage Ratio
- High Degree of Linearity
- High Speed, Typically 0.5 ns ($V_{CC} = 3$ V, $C_L = 50$ pF)
- Rail-to-Rail Input/Output
- Low On-State Resistance, Typically $\approx 6 \Omega$ ($V_{CC} = 4.5$ V)
- Latch-Up Performance Exceeds 100 mA Per JESD 78, Class II

DESCRIPTION/ORDERING INFORMATION

This dual bilateral analog switch is designed for 1.65-V to 5.5-V V_{CC} operation.

The SN74LVC2G66 can handle both analog and digital signals. The device permits signals with amplitudes of up to 5.5 V (peak) to be transmitted in either direction.

NanoStar™ and NanoFree™ package technology is a major breakthrough in IC packaging concepts, using the die as the package.

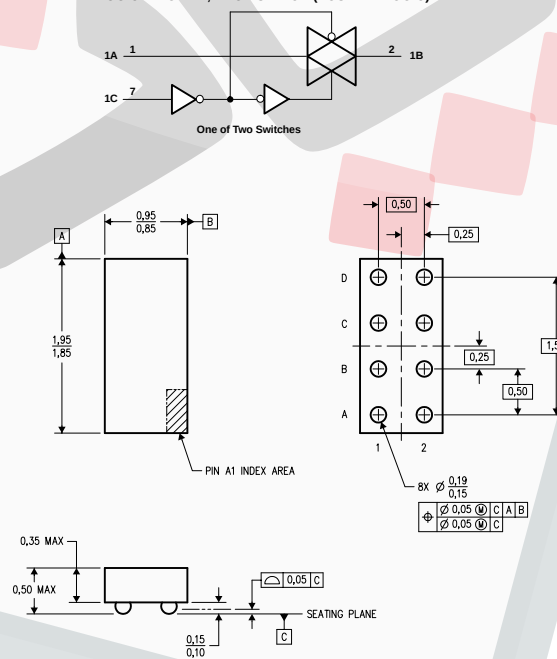
Each switch section has its own enable-input control (C). A high-level voltage applied to C turns on the associated switch section.

Applications include signal gating, chopping, modulation or demodulation (modem), and signal multiplexing for analog-to-digital and digital-to-analog conversion systems.

FUNCTION TABLE (EACH SECTION)

CONTROL INPUT (C)	SWITCH
L	Off
H	On

LOGIC DIAGRAM, EACH SWITCH (POSITIVE LOGIC)



SN74LVC1G10

SINGLE 3-INPUT POSITIVE-NAND GATE

- Available in the Texas Instruments NanoStar™ and NanoFree™ Packages
- Supports 5-V V_{CC} Operation
- Inputs Accept Voltages to 5.5 V
- Max t_{pd} of 3.8 ns at 3.3 V
- Low Power Consumption, 10-µA Max I_{CC}
- ± 24 -mA Output Drive at 3.3 V
- I_{off} Supports Partial-Power-Down Mode Operation
- Latch-Up Performance Exceeds 100 mA Per JESD 78, Class II
- ESD Protection Exceeds JESD 22
 - 2000-V Human-Body Model (A114-A)
 - 200-V Machine Model (A115-A)
 - 1000-V Charged-Device Model (C101)

description/ordering information

The SN74LVC1G10 performs the Boolean function $Y = \overline{A \cdot B \cdot C}$ or $Y = \overline{A} + \overline{B} + \overline{C}$ in positive logic.

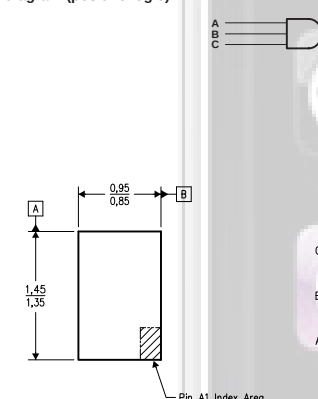
NanoStar™ and NanoFree™ package technology is a major breakthrough in IC packaging concepts, using the die as the package.

This device is fully specified for partial-power-down applications using I_{off} . The I_{off} circuitry disables the outputs, preventing damaging current backflow through the device when it is powered down.

FUNCTION TABLE

INPUTS			OUTPUT
A	B	C	Y
H	H	H	L
L	X	X	H
X	L	X	H
X	X	L	H

logic diagram (positive logic)



اطلاعات فنی برخی از آی سی های بکار رفته در گوشی



IPHONE

3G



Si8409DB

P-Channel 30-V (D-S) MOSFET

VISHAY

PRODUCT SUMMARY			
V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A)	Q _g (Typ)
-30	0.046 @ V _{GS} = -4.5 V	-6.3	17
	0.065 @ V _{GS} = -2.5 V	-5.3	

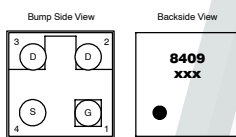
FEATURES

- TrenchFET® Power MOSFET
- New MICRO FOOT® ChipScale Packaging Reduces Footprint Area, Profile (0.62 mm) and On-Resistance Per Footprint Area
- Pin Compatible to Si8401DB

APPLICATIONS

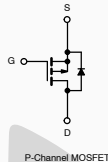
- Load Switch, Battery Switch, and PA Switch for Portable Devices

MICRO FOOT

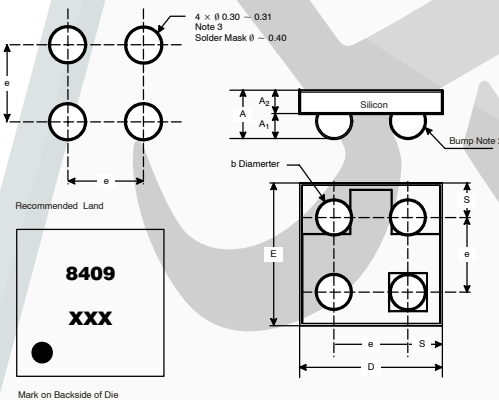


Device Marking: 8409
xxx = Date/Lot Traceability Code

Ordering Information: Si8409DB-T1-E1



MICRO FOOT: 4-BUMP (2 X 2, 0.8-mm PITCH)



Mark on Backside of Die

Si8402DB

20-V N-Channel 1.8-V (G-S) MOSFET

VISHAY

PRODUCT SUMMARY		
V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A)
20	0.037 @ V _{GS} = 4.5 V	7.3
	0.039 @ V _{GS} = 2.5 V	7.1
	0.043 @ V _{GS} = 1.8 V	6.8

FEATURES

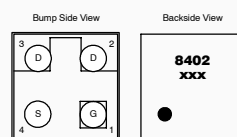
- TrenchFET® Power MOSFET
- New MICRO FOOT® ChipScale Packaging Reduces Footprint Area Profile (0.62 mm) and On-Resistance Per Footprint Area

APPLICATIONS

- PA, Battery and Load Switch for Portable Devices

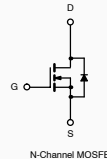
20-V N-Channel 1.8-V (G-S) MOSFET

MICRO FOOT

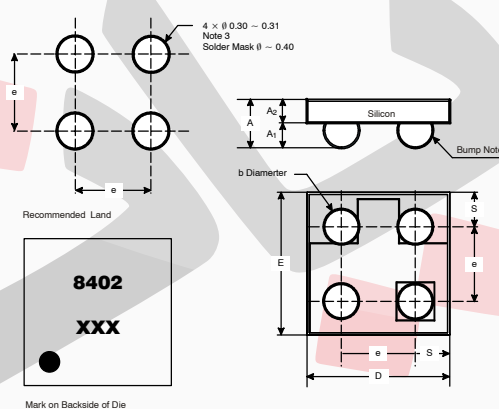


Device Marking: 8402
xxx = Date/Lot Traceability Code

Ordering Information: Si8402DB-T1



MICRO FOOT: 4-BUMP (2 X 2, 0.8-mm PITCH)

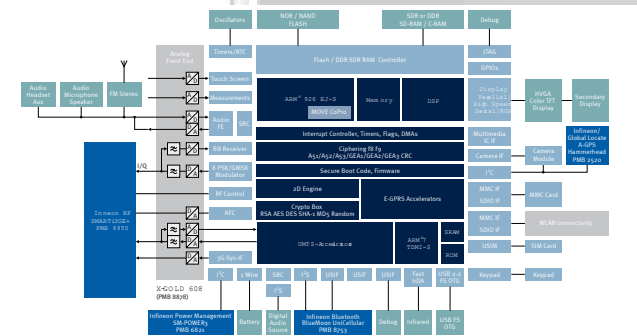


Mark on Backside of Die

PMB8878

X-GOLD 608-Broadband Mobile Experience with HSDPA 7.2 Mbit/s and Multimedia Engine

Block Diagram X-GOLD 608



X-GOLD 608 with its ARM 926 CPU, capable of processing speeds of up to 312MHz, is extending the capabilities of wireless multimedia without the need for a dedicated Application Processor. The powerful multimedia engine integrated with the advanced dual-mode HSDPA/WCDMA/E-GPRS modem technology enables a wide spectrum of multimedia functionalities, mobile entertainment and office applications with high data rates of up to 7.2Mbit/s. X-GOLD 608 based platforms enable handsets to provide consumer electronic quality such as camera support of up to 5 MPixel as well as video telephony, streaming, recording and playback with up to 30 frames per second and a resolution of up to 320 x 480 pixels (HVGA) in MPEG4, H.264 or Real video formats and advanced audio codecs, like enhanced AAC+. THE OPTIMIZED X-GOLD 608 architecture makes it possible for the users to run several applications simultaneously; e. g. surf the internet, download emails or data to a SD-card with HSDPA category 8 (7.2Mbit/s) while listening to MP3 music over a stereo Bluetooth headset.

Key Benefits:

- High integration level of key multimedia features allows minimum cost of system solutions for tomorrow's feature phones
- High overall system performance with high speed ARM subsystem and double-data rate memory access
- Proven leading-edge modem technology with WCDMA, HSDPA Cat. 8 as well as third generation E-GPRS evolution
- Feature upgrade flexibility through optional companion/multimedia chips via standardized interface
- Support of connectivity modules such as Bluetooth, WLAN, A-GPS, DVB-H, FM Radio, etc.

Key Application Features

- ARM 926 based single modem and application processor with cache support and fast tightly-coupled memories
- Hardware Crypto box - DRM 2.0, SIM Lock, IMEI protection
- Hardware security - E-fuse, Boot Code Protection, Secure Mode
- CPU, RGB display interface supporting high resolution color displays up to HVGA
- High-speed serial display interface for cost effective clamshell mechanisms up to HVGA
- Support of cameras up to 5 MPixel
- MPEG4/H.263 hardware accelerator
- MP3, AAC, AAC+, enhanced AAC+
- 2D Graphic hardware
- Support for video telephony, streaming, recording and playback
- 2 x MMC/SD interfaces, SDIO capable
- USB 2.0 on-the-go, full speed
- Fast IRDA
- Multimedia extension interface (MMIC-IF) for support of high end graphic accelerators
- 2 bi-directional digital audio interfaces (I2S) to connect audio companion ICs and Bluetooth modules
- Dedicated NAND flash controller supporting burst mode and error detection
- Support of DDR-SDRAM devices

WITH ITS NEW X-GOLD 608 BASEBAND, Infineon Technologies extends its well known X-GOLD baseband family to support the 3.5G mobile phone generation. The integrated dual-mode HSDPA/WCDMA/E-GPRS modem technology, together with high speed multimedia hardware accelerators and the advanced connectivity options enable X-GOLD 608 to fulfill the requirements of tomorrow's mobile phones.

INFINEON is one of the early platform vendors to support HSDPA category 8 (7.2Mbit/s). The implementation of equalizer based advanced receiver technology improves the data throughput, especially at high data rates, by up to 40%. In addition, the software programmable slot processing in the HSDPA Rx path provides further flexibility for performance enhancements. The HSDPA performance of X-GOLD 608 meets and exceeds all test cases as specified in the 3GPP standard.

INFINEON's 3.5 G physical layer architecture is future-proof and designed for an easy upgrade to higher HSDPA data rates, HSUPA and also Rx-diversity.

Key Modem Features

- HSDPA - category 8 (7.2Mbit/s)
 - Implementation of fractional chip rate equalizer
 - Configurable to lower categories / data rates
 - Option to switch off HSDPA to save power
- WCDMA
 - 384kbit/s class for uplink and downlink
 - 640kbit/s peak data rates for uplink and downlink independently

- EDGE multislot class 12
- GPRS/GSM
- FR, HR, EFR, AMR
- SAIC
- Tx diversity
- DTM class 11
- Polyphonic Ringer support for up to 64 voices at up to 48 kHz sampling rate
- Echo cancellation/noise reduction
- GT/T/TTY

اطلاعات فنی برخی از آی سی های بکار رفته در گوشی



IPHONE 3G

3G



PMB 6821



SM-POWER3 extends the SM-Power family with a new highly integrated power management IC. It is optimized to support mobile devices based upon S-Gold3 and S-Gold3H, with features ranging from EDGE up to 3G and HSDPA.

SM-POWER3 is designed for mobile systems composed of digital or mixed signal baseband ICs, analog components, RF transceiver ICs, LCD/TFT graphic displays with backlight, camera, loudspeaker, and USB interface.

SM-POWER3 also supports charging for mobile rechargeable batteries like Li-Ion or Li-Polymer. It provides the different supply voltages for the system using highly efficient DC/DC buck and boost converters and linear low-dropout regulators (LDO's).

IN ADDITION, the SM-Power3 generates a power on reset, stand-by voltages, and supports various low power modes.

THE SM-POWER3 provides all functions needed for the system power management with a minimized bill of material and size of external components.

Features

- General
 - Software-controlled charging of Lithium-Ion or Li-Polymer batteries
 - Different low-power modes with very low power consumption
 - Temperature monitoring with built-in over-temperature warning
- Switching converters
 - SD1: Fully integrated high-efficiency step-down converter with dynamic output voltage scaling and PFM low-power mode
 - SD2: Fully integrated high-efficiency step-down converter with PFM low-power mode
 - SU1: 5.6 ... 25 V Step-up converter driving white LED for backlight and flashlight
- Linear Low-Dropout (LDO) regulators
 - General-Purpose LDO's
 - Low-Noise LDO's
 - Low-power LDO's
- LED Control
 - 3x PWM-modulated control signal
 - Driver for white LEDs, e.g. for flashlight
 - Support for LEDs connected in series
 - Support for trickle charging LED and indicator LED
- Package
 - Ultra-thin PG-WFSGA 121 (7 x 7 x 0.8 mm)
- Evaluation kits

PMB 2525



The Industry's Highest Performance GPS Receiver in the smallest package yet.

Hammerhead II delivers all the performance of its predecessor, while achieving a new benchmark for high performance Positioning & Navigation integration into mobile devices.

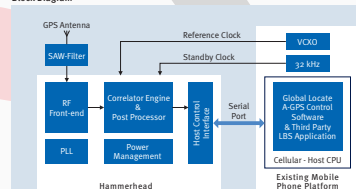
USING CHIP scale packaging (CSP) technology, its size (3.59 x 3.75 mm) now offers possibilities of integration into the miniaturizing world of mobile handsets.

Hammerhead II integrates a high performance A-GPS baseband processor and a low-noise GPS RF front end. It comes packed with new software features such as advanced multi-path mitigation that avoid large errors in urban environments caused by reflected signal-in buildings and other structures.

Key Features and Benefits

- Single-chip minimizing board space (< 50 mm² PCB area for complete A-GPS solution)
- Advanced low-power 0.13 μ RF CMOS technology with smart power management
- Real-time hardware correlator engine (fast acquisition and high sensitivity)
- High sensitivity, -160 dBm, enabling indoor and deep urban operation
- Built-in voltage regulators supporting single-power supply source
- Multiple-mode operation
 - MS-based (calculation of position in mobile handset)
 - MS-assisted (calculation of position in base station)
 - Autonomous (no assistance by network)
 - Enhanced autonomous (using four day assistance data)
- Multiple protocol operation
 - Control plane (RRLP & RRC)
 - User plane (SUPL)
- A-GPS control software enables non disrupting call flow and ease integration
- Standard compliant (exceeds requirements for 2.5 G and 3 G networks)

Block Diagram



Product Summary

Product	Sales Code	Package
Hammerhead II	PMB 2525	SG-UFWLB-49 (3.59 x 3.75 mm) lead-free/halogen-free

Application Examples

- Personal Navigation: Never get lost again in foreign cities. Your mobile phone is leading the way to your destination, whether you start indoors or outdoors. Avoid being delayed in traffic jams by utilizing real-time traffic information.
- Location-based Services: Finding the way to points of interest simplifies your life. Take the short way to restaurants in your neighborhood, the nearest gas station or metro station. Use your LBS application indoors to start planning your trip before you get in your car.
- Emergency Assistance: A-GPS-enabled mobile telephones are in demand to allow accurate tracking of emergency calls placed from mobile telephones by the end of 2005. Hammerhead II will enable mobile users calling emergency telephone codes to provide emergency services with very accurate location information, both from indoors and outdoors.
- Friend/Finder and Child Safety: Meeting with friends and family is now an easy task by sharing your personal location. Keep an eye on the current position of your children and keep them away from dangerous places.

- Cost-optimized architecture for integration into mobile phones
- No additional external CPU or memory required
- Both A-GPS control software and LBS (location based services) application executed on host CPU of cellular processor
- Serial host interface (UART, SPI or I²C)
- No additional TCXO required, uses host 32 kHz standby clock & reference clock (10 to 40 MHz)

Advantages

Hammerhead II is based on Global Locate IP and state-of-the-art Infineon RF CMOS IP and process technology. This ground breaking chip is the key for enabling location-based services such as emergency assistance and personal navigation in deep urban canyons, in moving vehicles, and indoors.

Hammerhead II uses the proven host-based architecture pioneered by GL as the best fit for mobile devices as proven in mass market 2.5 G and 3 G devices shipping now. GL host-based architecture leverages some of the resources already existing in the mobile device without imposing a big CPU load (~ 3 - 6 MIPS) or any real time requirements. Hammerhead II uses standard serial communication interfaces with speeds as low as 38,400 bps. Global Locate's Host-based architecture yields the lowest system cost solution as well as the smallest footprint without compromising performance.

NUF2441FC

Integrated Passive Filter with ESD Protection



This device is designed for cell phone applications requiring Headset and Speaker Phone, EMI Filtering and ESD Protection. This device offers an integrated solution in a small package reducing PCB space and cost.

Features:

- Provides EMI Filtering and ESD Protection
- Single IC Offers Cost Savings by Replacing 2 Inductors, 4 Capacitors, and 4 TVS Diodes
- Compliance with IEC61000-4-2, (Level 4) 30 kV (Contact), 30 kV (air)
- Flip-Chip Package
- Moisture Sensitivity Level 1
- ESD Ratings: Machine Model = C
- Human Body Model = 3B
- This is a Pb-Free Device*

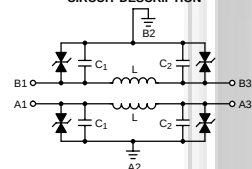
Benefits:

- Flip-Chip Package Minimizes PCB Space
- Integrated Circuit Increases System Reliability versus Discrete Component Implementation
- TVS Devices Provide ESD Protection That is Better than a Discrete Implementation because the Small IC minimizes Parasitic Inductances

Typical Applications:

- Cell Phones
- Communication Circuits

CIRCUIT DESCRIPTION



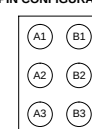
MARKING DIAGRAM



Flip-Chip CASE 499J

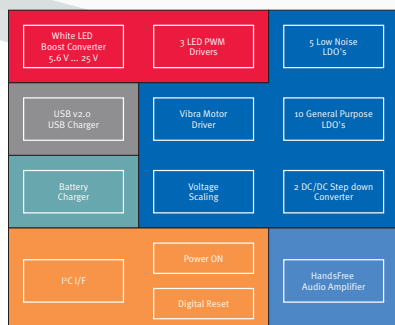
2441 = Specific Device Code
A = Assembly Location
Y = Year
WW = Work Week

PIN CONFIGURATION



(Bump View)

Block Diagram





IPHONE

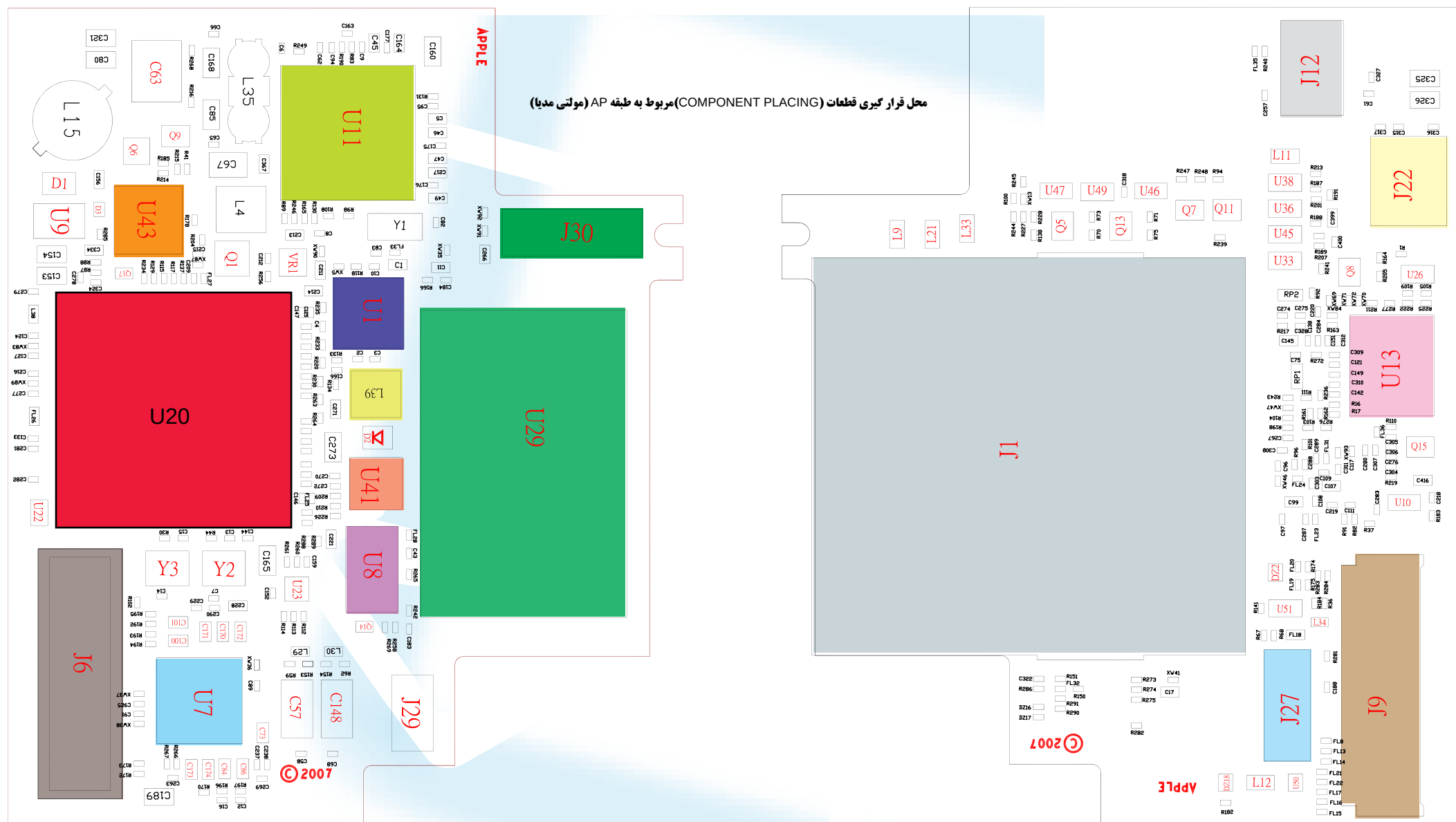
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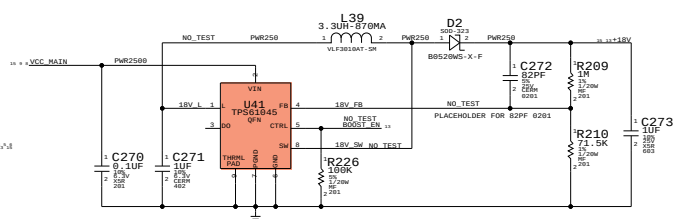
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این گوشی دارای دو بخش مجزا که هرکدام توسط CPU جداگانه ای کنترل می شوند می باشد ، و هر بخش دارای برد جداگانه ای می باشد .
بخش اول که در این کتاب به نام AP (APPLICATION PROCESSOR) خواهیم شناخت ، کنترل تمامی قسمت مختلف گوشی اعم از LCD ، دوربین ، به غیر از بخش تلفن (شامل طبقه آنتن و طبقات رادیویی مثل بلوتوس و WLAN) را بر عهده خواهد داشت .
پردازنده مربوط به این بخش CPU ساخت SAMSUNG به شماره S5L8900 که بر پایه تکنولوژی ARM (ARM11776JZF) می باشد و پردازشگر استفاده شده در IPOD TOUCH و IPHONE 3G نیز می باشد . بخش اول کتاب کلاً به طبقه AP خواهد پرداخت که شامل شماتیک و COMPONENT PLACING این بخش می باشد. در ضمن برای راحتی در یافتن آی سی ها از رنگ معینی برای مشخص کردن هر آی سی استفاده شده است ، برای مثال رنگ قرمز در شماتیک و برد نشان دهنده CPU می باشد که این امر کمک به پیدا کردن سریع قطعات می نماید . در ضمن برای بدست آوردن اطلاعات بیشتر در مورد هر آی سی در انتهای همین کتاب اطلاعات فنی آی سی ها گنجانده شده است که می توانید با مراجعه به این بخش و با استفاده از شماره فنی آی سی اطلاعات مورد نظر خود را بدست بیاورید .

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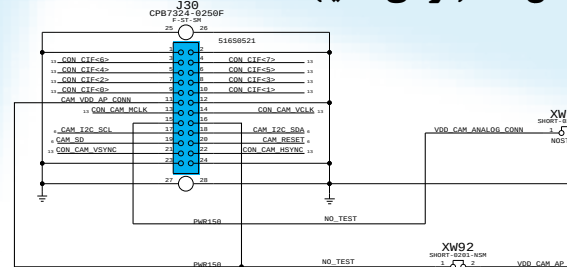
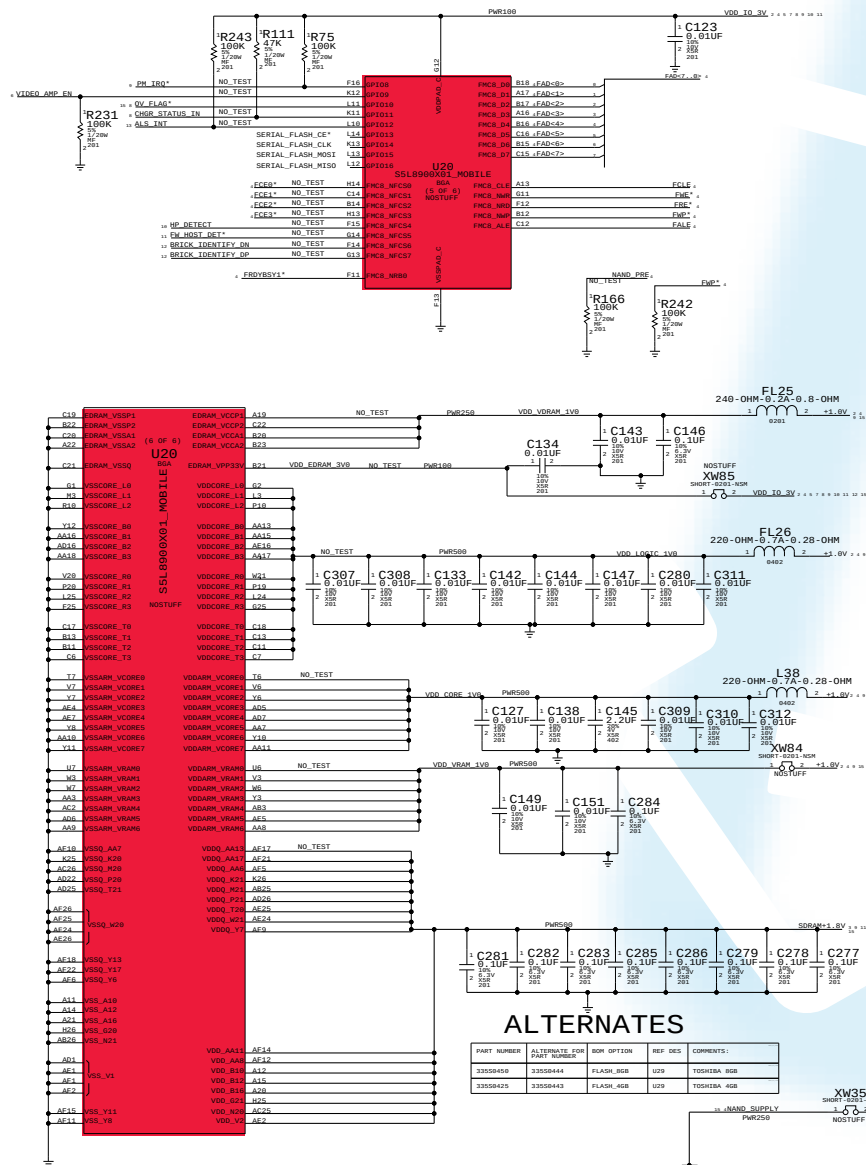
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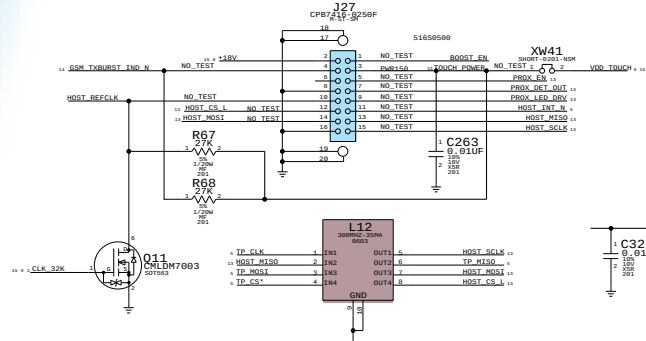
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NAND FLASH & GPIO

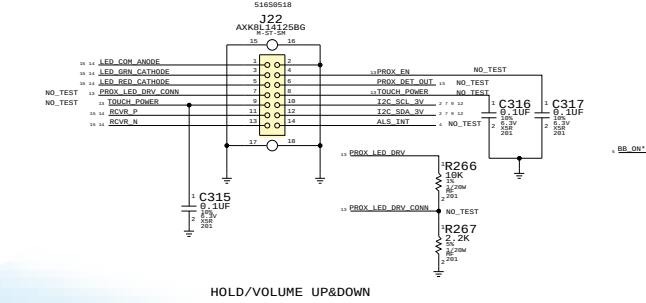


GRAPE CONNECTOR (POR)



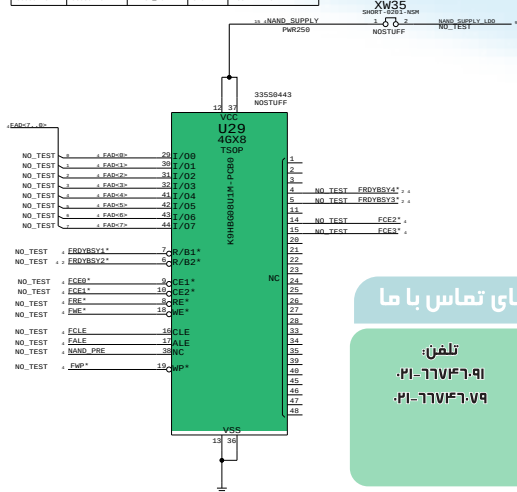
PROX/RECV CONN

ALS 12C ADDRESS: 1001001X

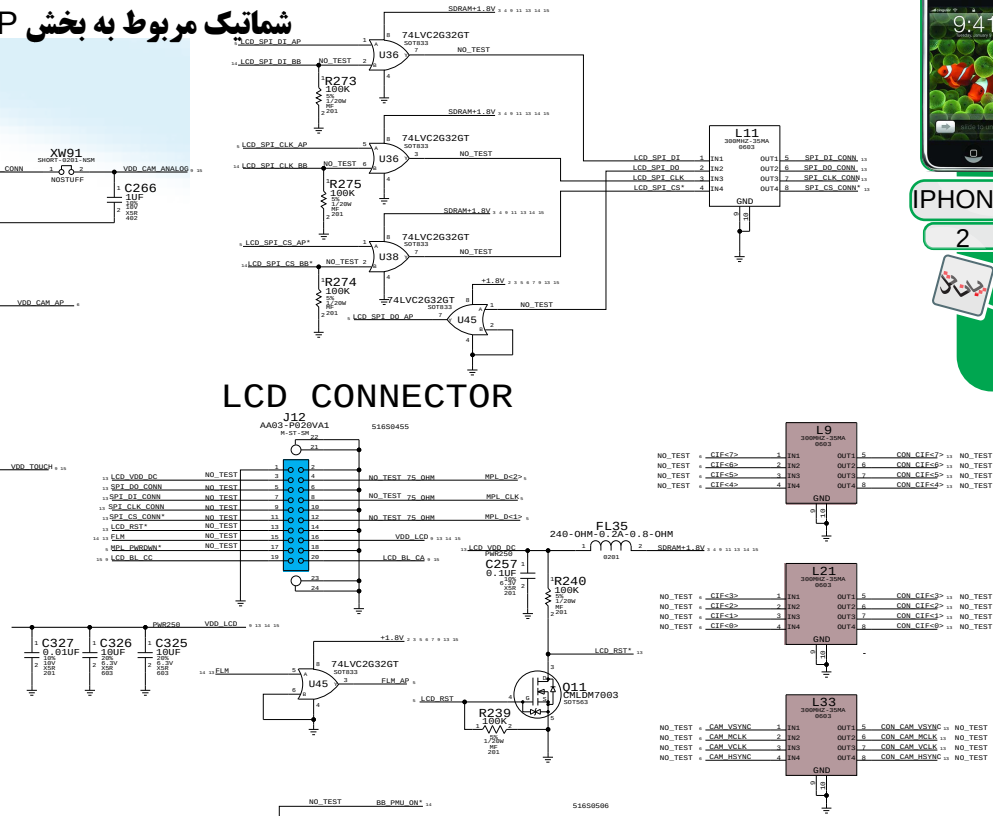


ALTERNATES

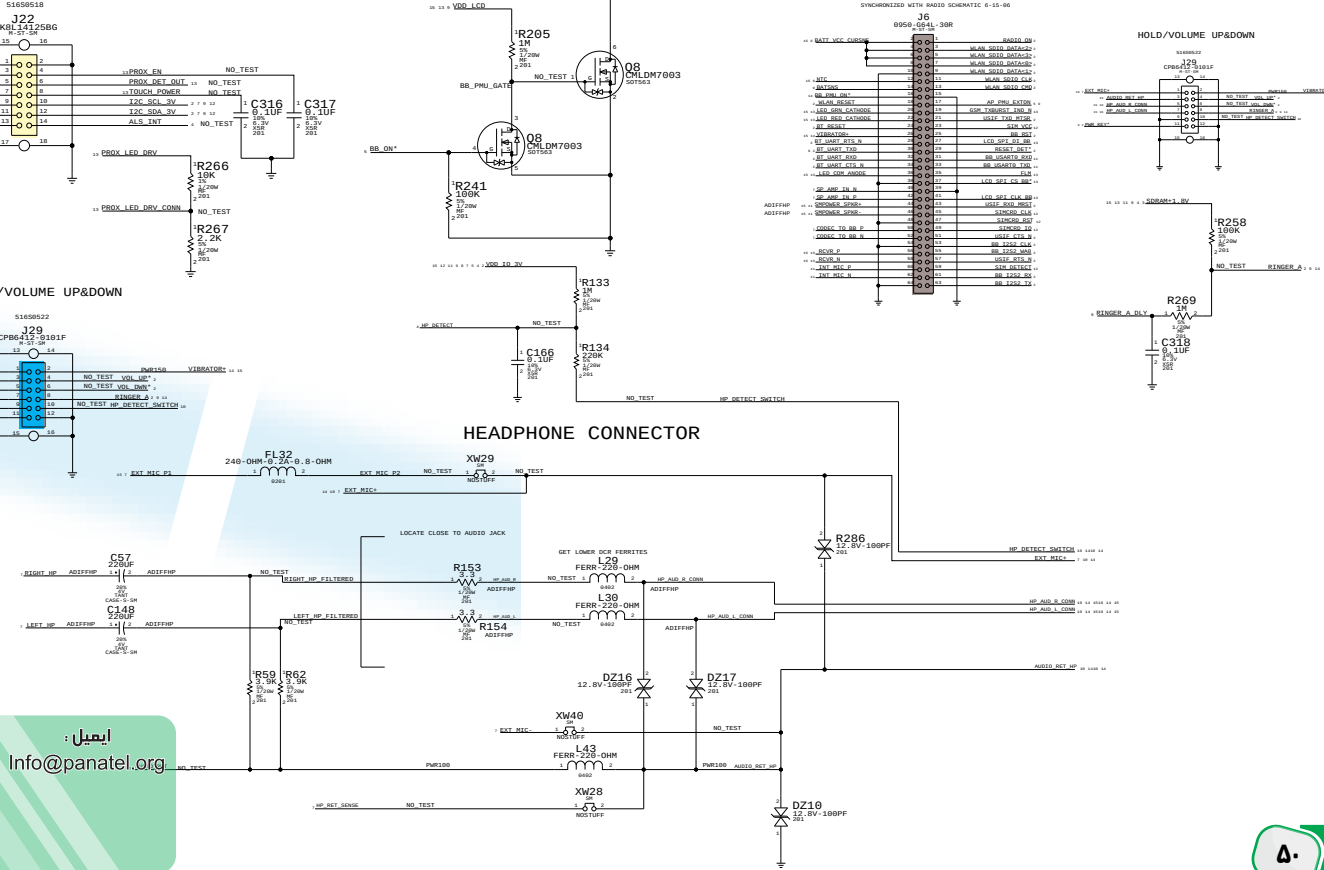
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
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33550425	33550443	FLASH_4GB	U29	TOSHIBA 4GB



LCD CONNECTOR

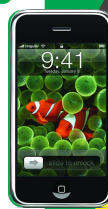


HEADPHONE CONNECTOR



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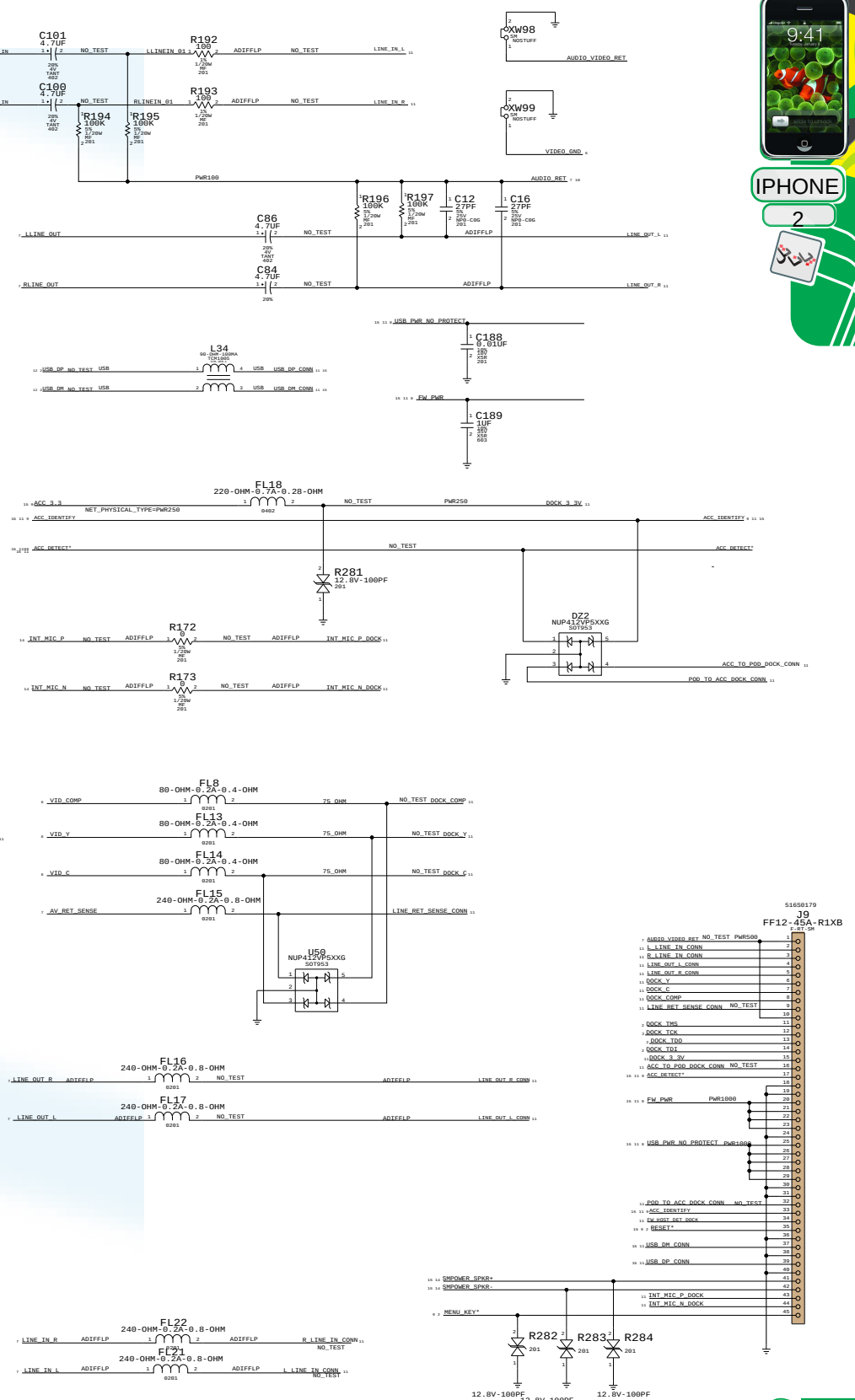
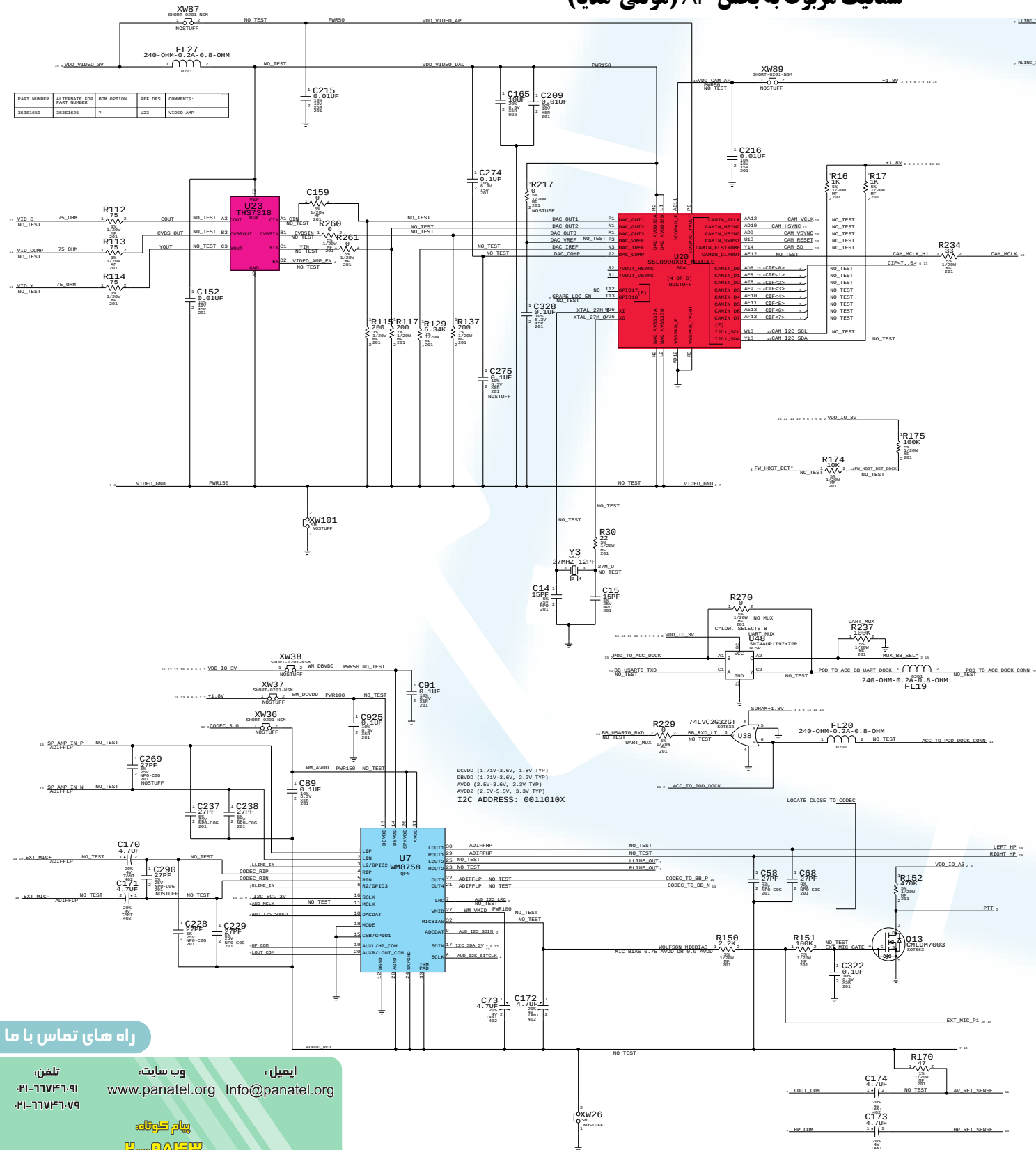
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IPHONE

2

شماتیک مربوط به بخش AP (مولتی مدیا)



IPHONE

2



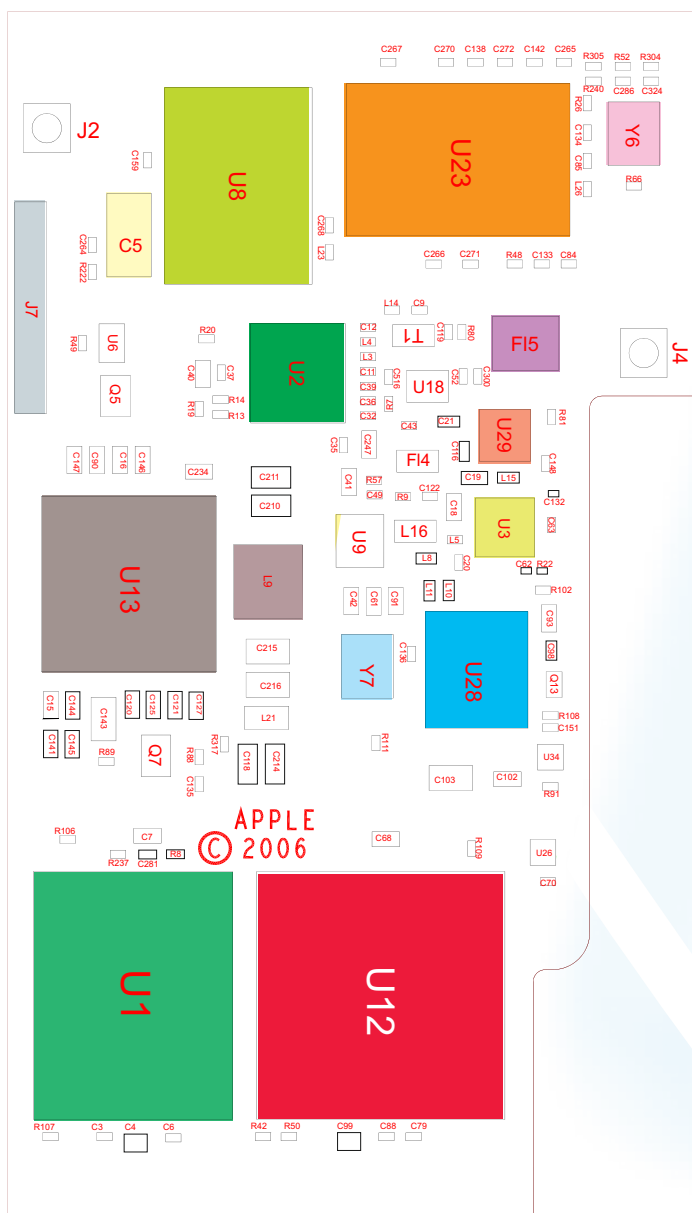
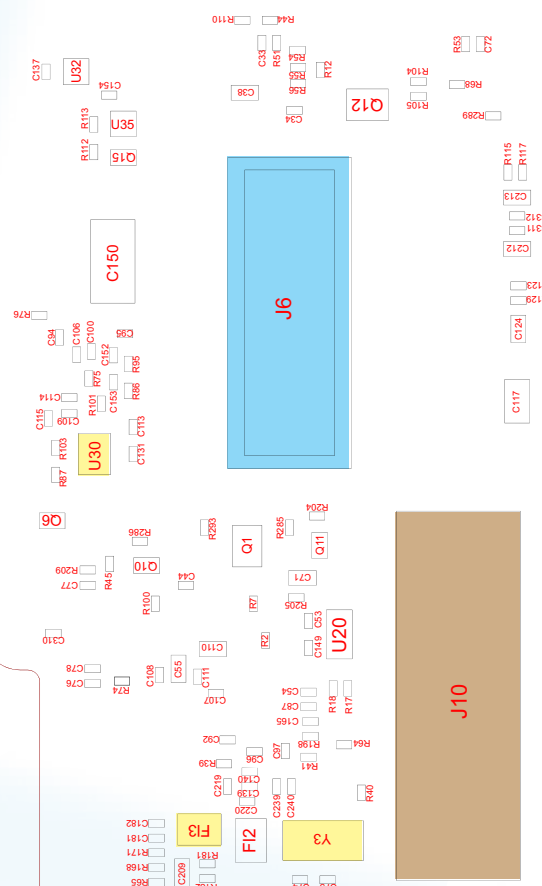
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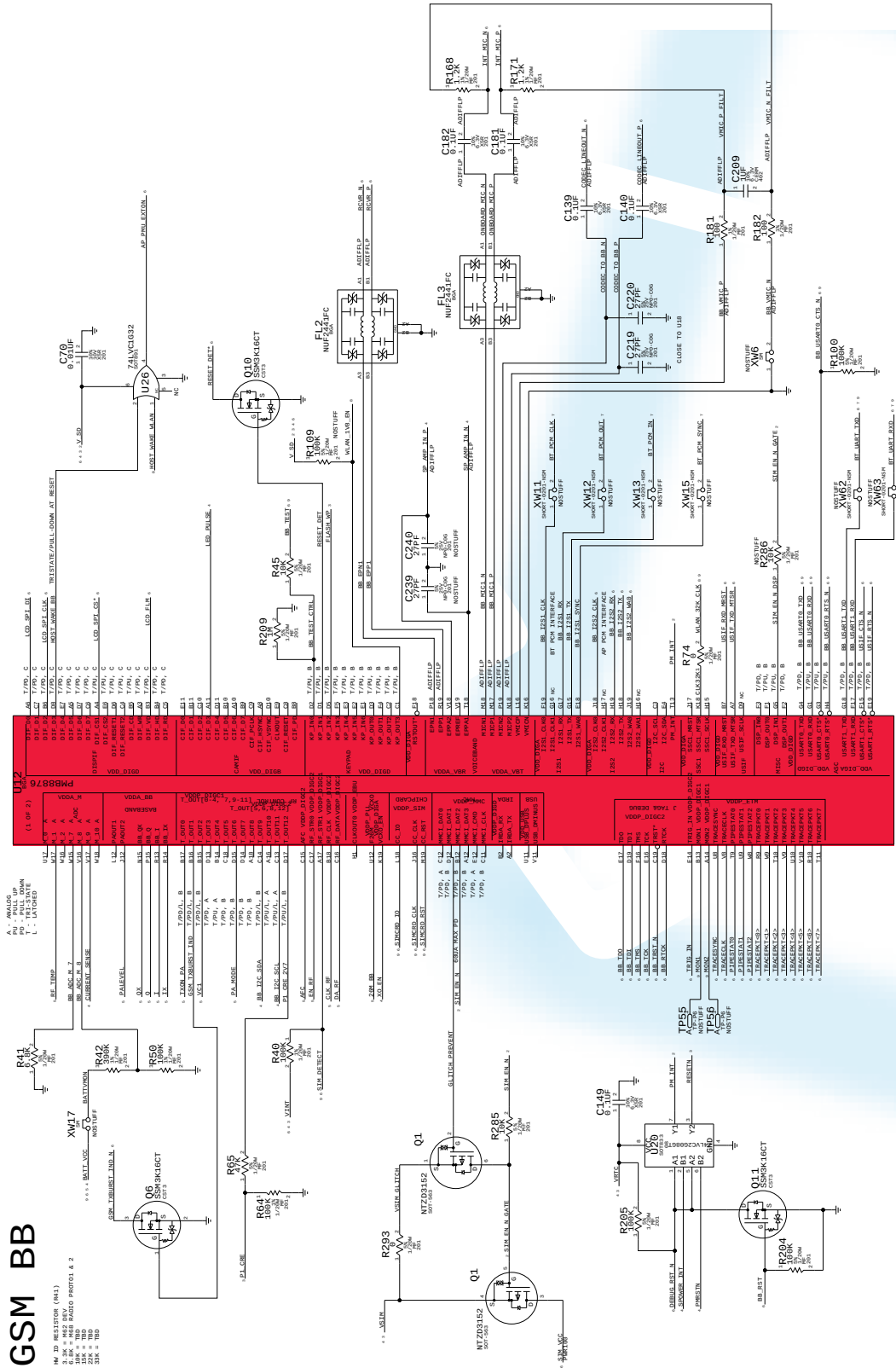


The diagram illustrates the S/M POWER (PMB 6812) system architecture. A central control unit manages various power and data paths. Power is supplied from an AC-Adaptor and a NiMH/LiIon Battery through a Charger and Pre-Charge circuit. The system interfaces with an iPC Interface and Power Bus Peripherals (V_USB Host, V_Memory, V_BB I/O HI, V_BB USB, V_BB Analog, V_ETC, V_BBn, V_BBz). It also drives an Amp (Speaker), a Motor Driver (Motor), and an LED Driver (LEDs). The system is connected to Power Bus Bluetooth (V_BT BB, V_RFz BT) and Power Bus RF (V_RF Main, V_RF VCO). At the bottom, it interfaces with BB (LR) / Mem / Copro Step down 600 mA and On-chip Reference blocks.

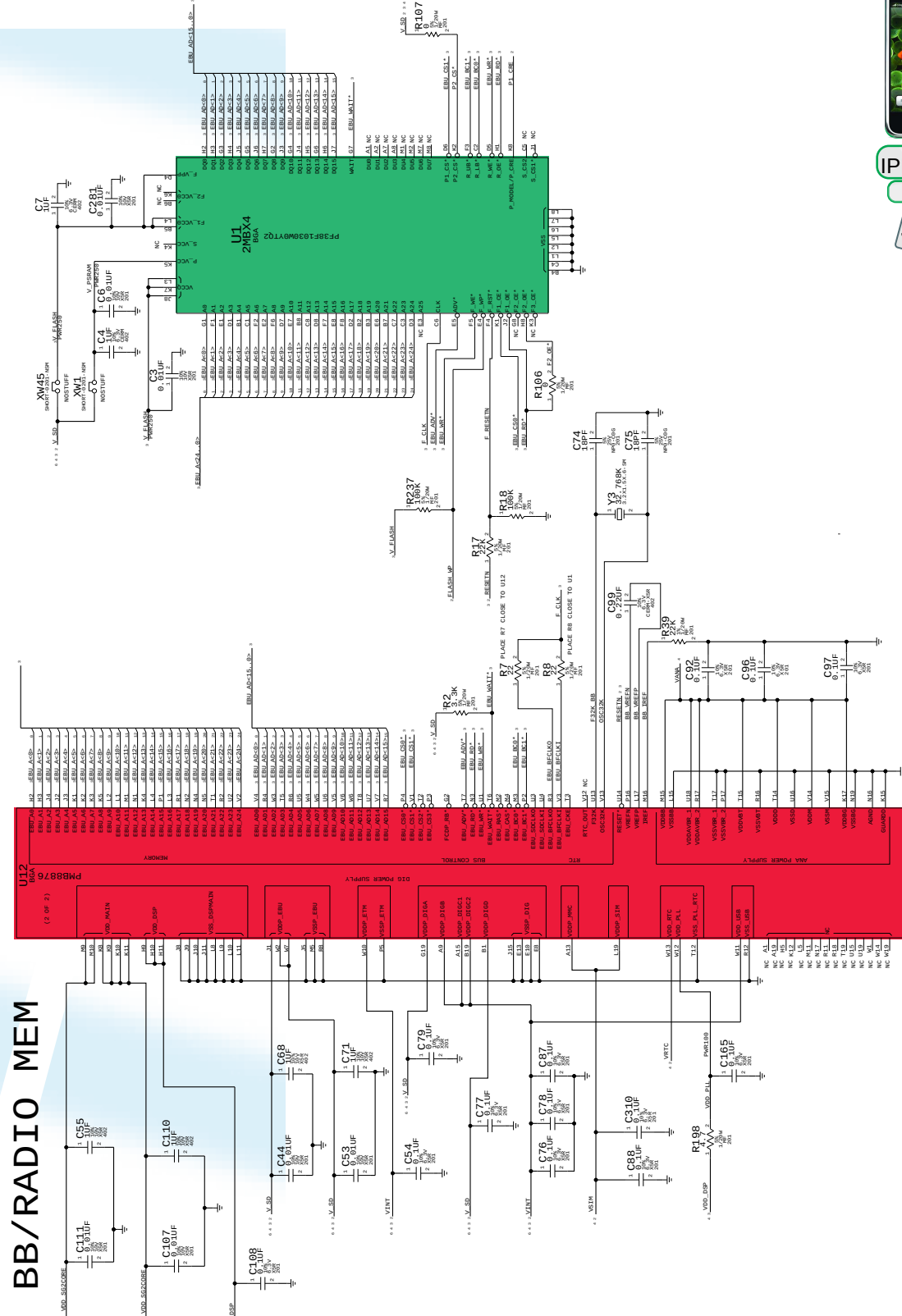


GSM BB

HW ID RESISTOR (R41)
3.3K = M62 DEV
6.8K = M68 RADIO PROTOL & 2
10K = TBD
15K = TBD
22K = TBD

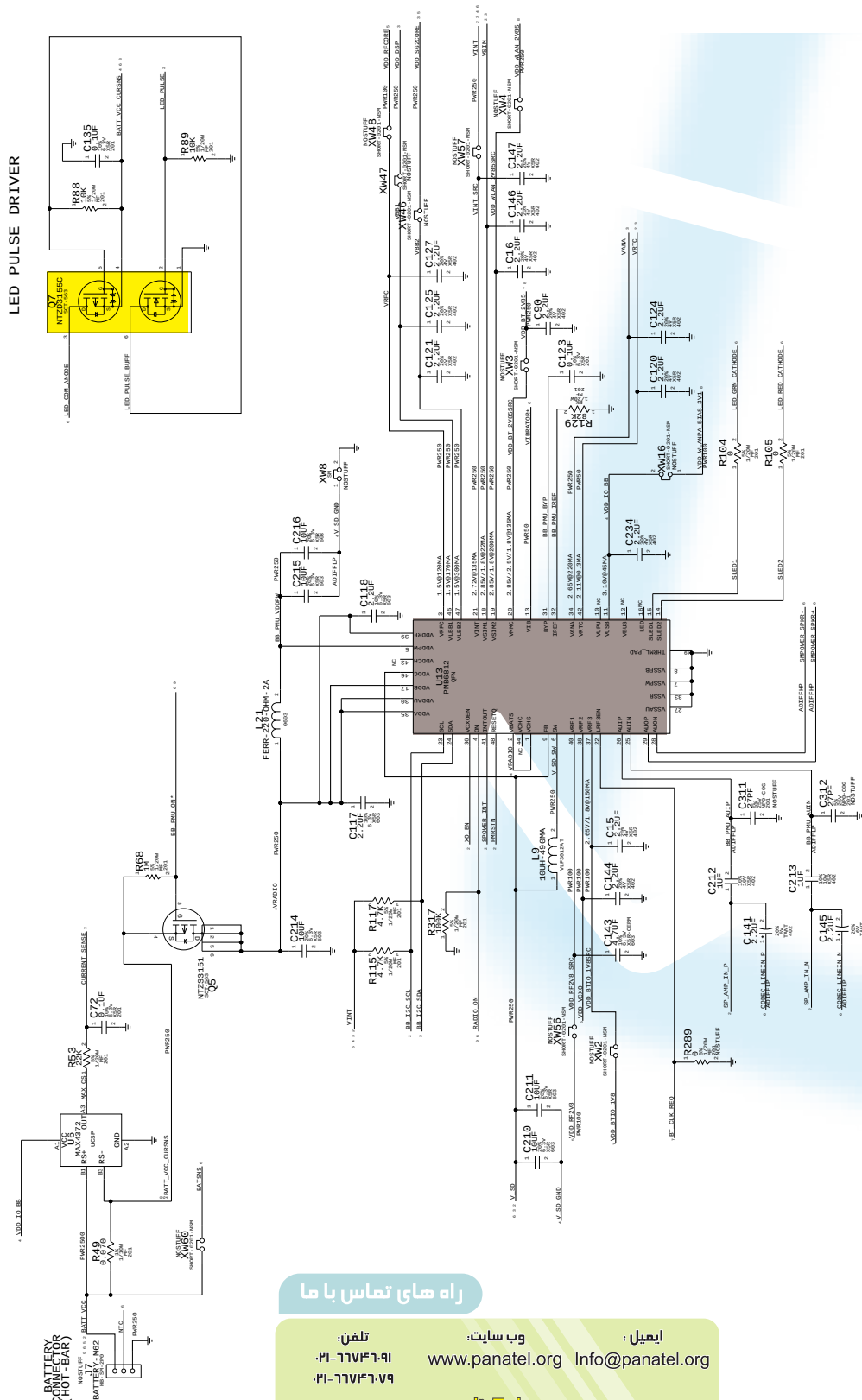


GSM BB/RADIO MEM

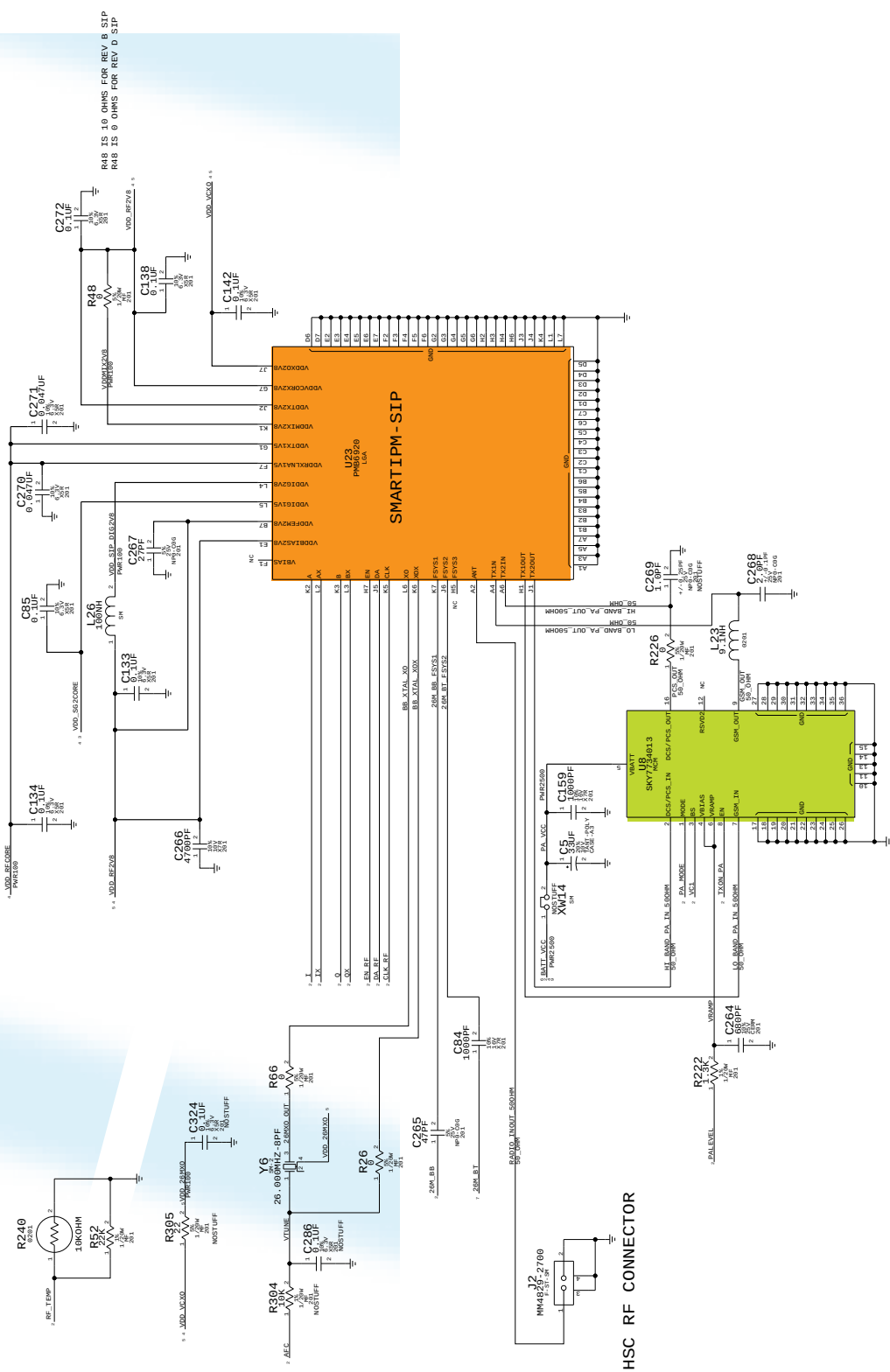


IPHONE

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GSM RF - SMARTIPM-SIP + SKYWORKS

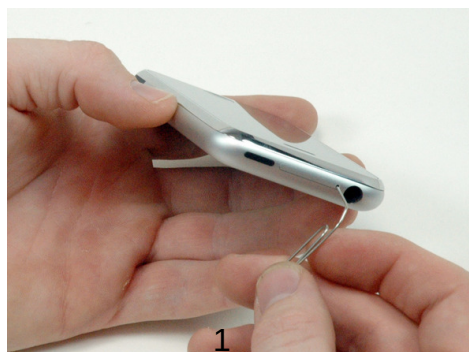


تصاویر مربوط به باز کردن آیفون 2G



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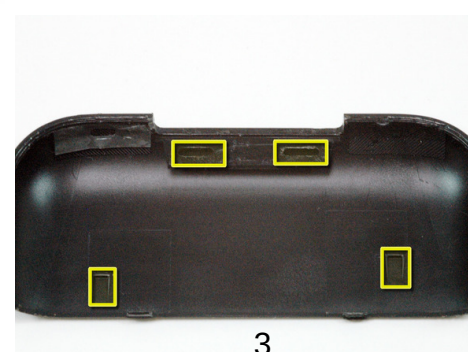
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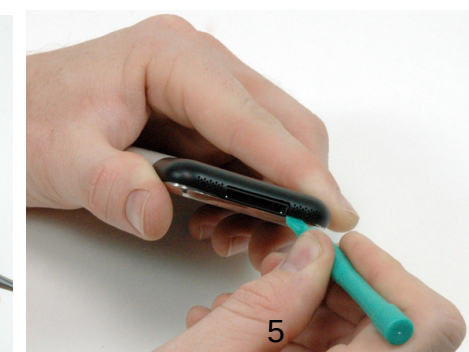
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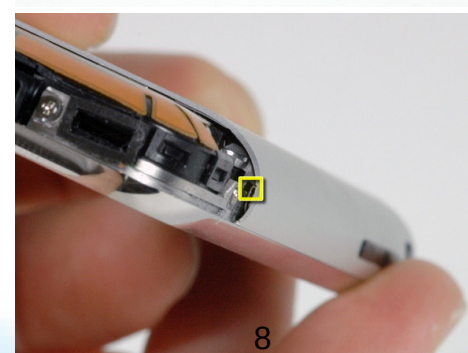
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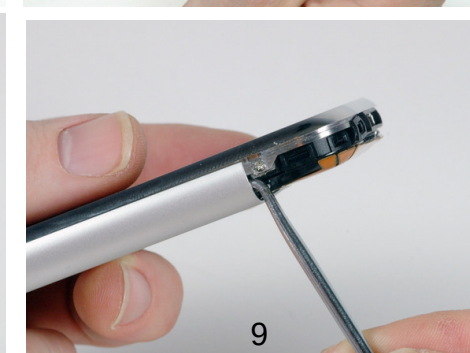
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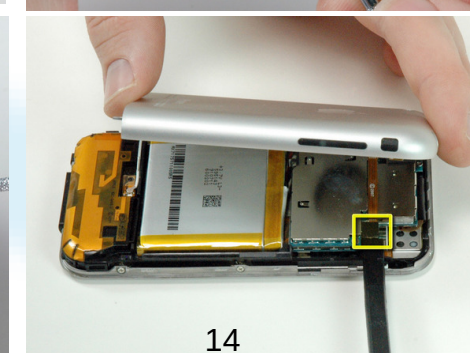
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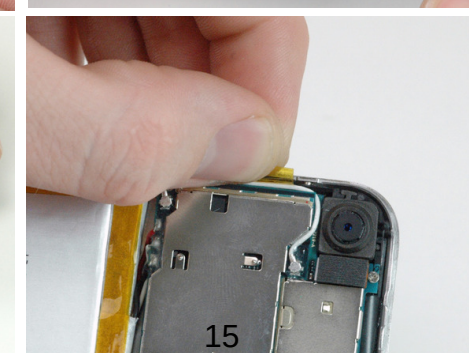
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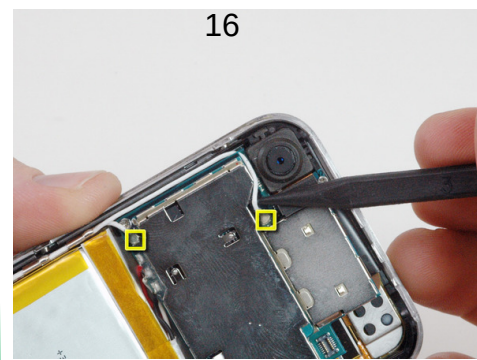
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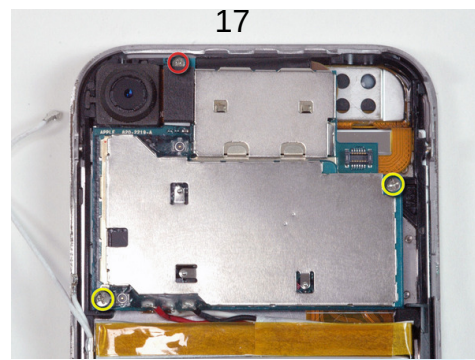
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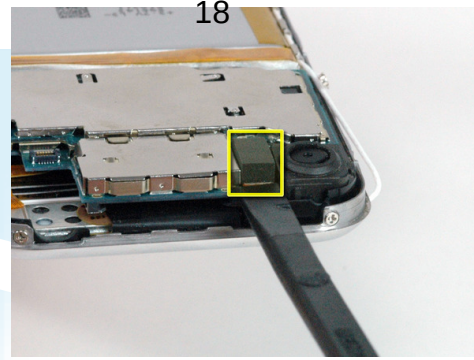
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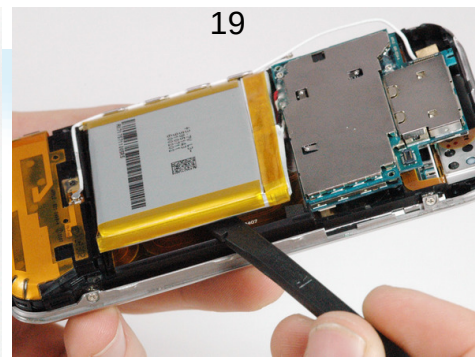
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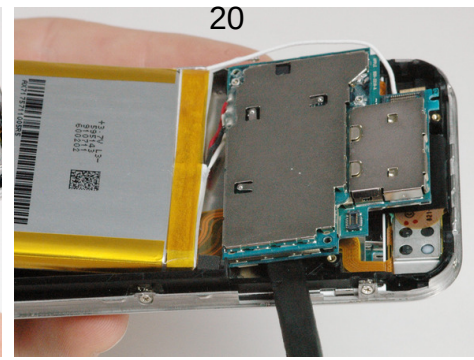
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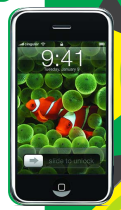
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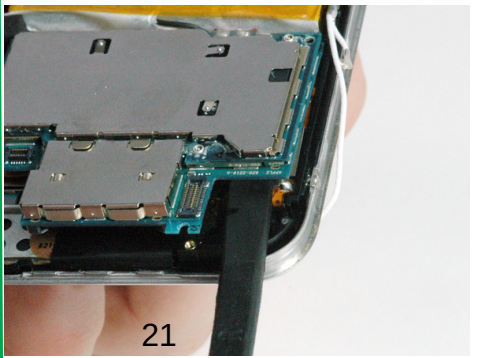


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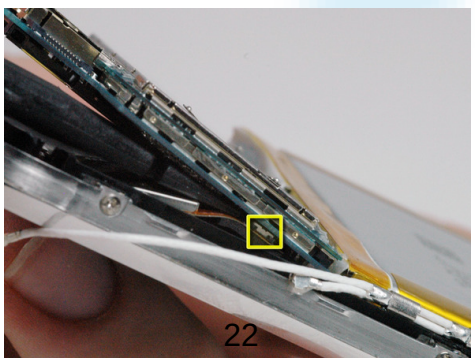


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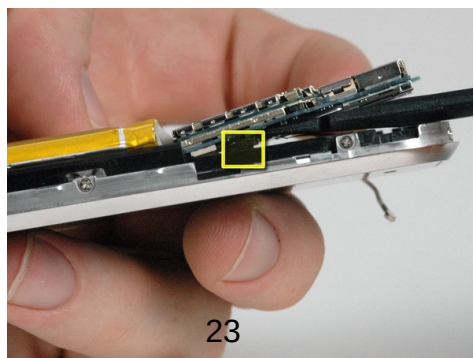
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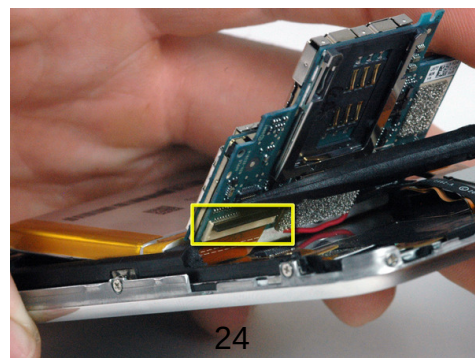
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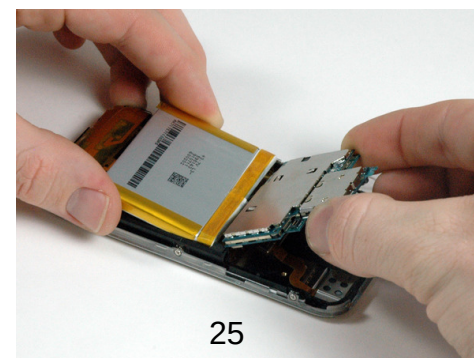
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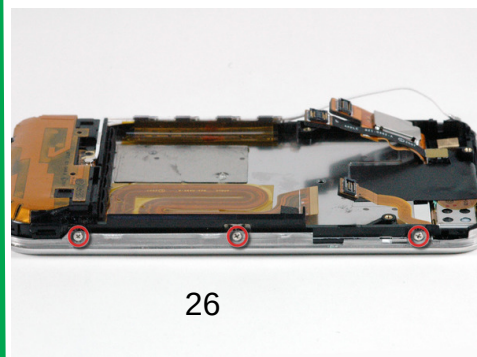
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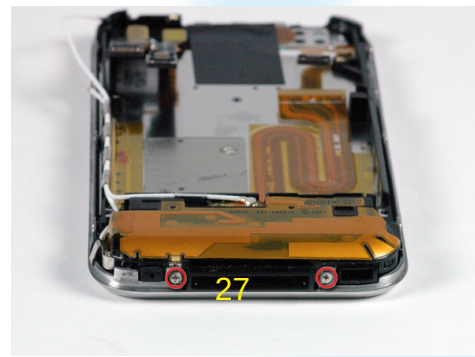
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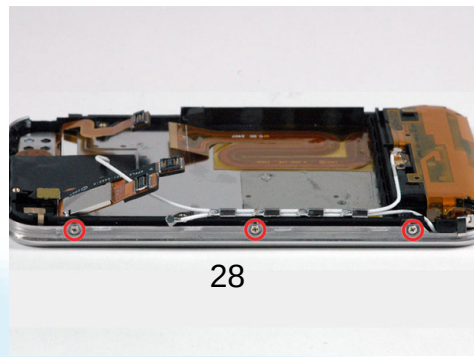
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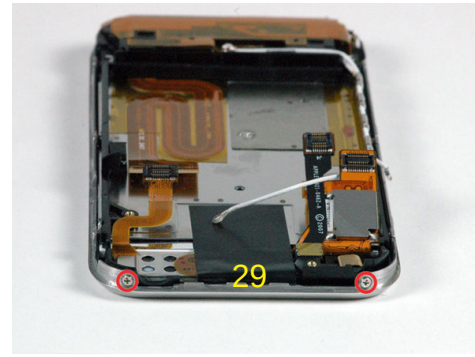
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27



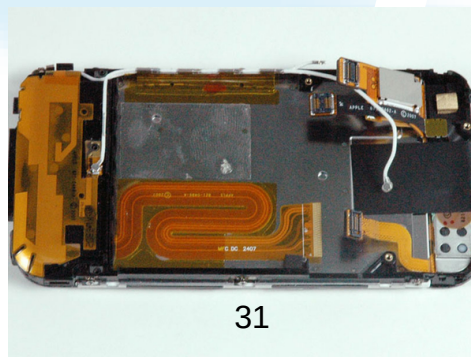
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31

اطلاعات فنی برخی از آی سی های بکار رفته در گوشی



IPHONE

2



74LVC2G08

Dual 2-input AND gate

1. General description

The 74LVC2G08 provides a 2-input AND gate function.

Inputs can be driven from either 3.3 V or 5 V devices. This feature allows the use of the 74LVC2G08 as a translator in a mixed 3.3 V and 5 V environment.

This device is fully specified for partial power-down applications using I_{OFF} . The I_{OFF} circuitry disables the output, preventing a damaging backflow current through the device when it is powered down.

2. Features

- Wide supply voltage range from 1.65 V to 5.5 V
- 5 V tolerant outputs for interfacing with 5 V logic
- High noise immunity
- ± 24 mA output drive ($V_{CC} = 3.0$ V)
- CMOS low power consumption
- Complies with JEDEC standard:
 - ◆ JESD8-7 (1.65 V to 1.95 V)
 - ◆ JESD8-5 (2.3 V to 2.7 V)
 - ◆ JESD8-B/JESD36 (2.7 V to 3.6 V)
- Latch-up performance exceeds 250 mA
- Direct interface with TTL levels
- Inputs accept voltages up to 5 V
- ESD protection:
 - ◆ HBM JESD22-A114E exceeds 2000 V
 - ◆ MM JESD22-A115-A exceeds 200 V
- Multiple package options
- Specified from -40°C to $+85^{\circ}\text{C}$ and -40°C to $+125^{\circ}\text{C}$

3. Functional diagram

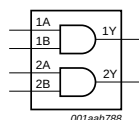


Fig 1. Logic symbol

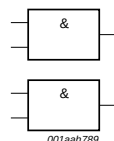


Fig 2. IEC logic symbol

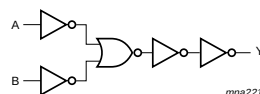


Fig 3. Logic diagram (one gate)

4. Pinning information

4.1 Pinning

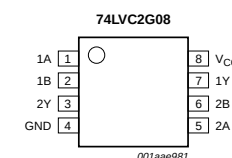


Fig 4. Pin configuration SOT505-2 (TSSOP8) and SOT765-1 (VSSOP8)

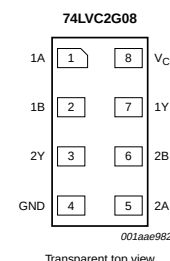


Fig 5. Pin configuration SOT833-1 (XSON8)

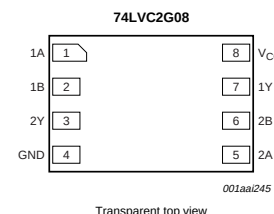


Fig 6. Pin configuration SOT996-2 (XSON8U)

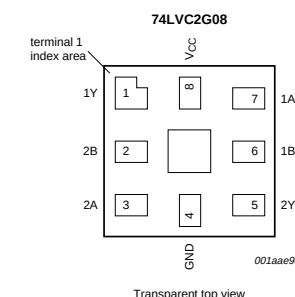


Fig 7. Pin configuration SOT902-1 (XQFN8U)

4.2 Pin description

Table 3. Pin description

Symbol	Pin		Description
	SOT505-2, SOT765-1, SOT833-1 and SOT996-2	SOT902-1	
1A	1	7	data input
1B	2	6	data input
2Y	3	5	data output
GND	4	4	ground (0 V)
2A	5	3	data input
2B	6	2	data input
1Y	7	1	data output
V _{CC}	8	8	supply voltage

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وب سایت:
www.panatel.org

ایمیل:
Info@panatel.org

پیام کوتاه:
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IS302DLH

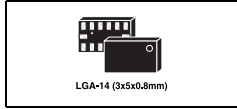
MEMS digital output motion sensor
ultra low-power high performance 3-axes "piccolo" accelerometer

Features

- Wide supply voltage, 2.16 V to 3.6 V
- Low voltage compatible I/Os, 1.8 V
- Ultra thickness 0.8 mm
- Ultra low-power mode consumption down to 10 μ A
- $\pm 2g \pm 4g \pm 8g$ dynamically selectable full-scale
- I²C/SPI digital output interface
- 16 bit data output
- 2 independent programmable interrupt generators for free-fall and motion detection
- Sleep to wake-up function
- 6D orientation detection
- Embedded self-test
- 10000 g high shock survivability
- ECOPACK[®] RoHS and "Green" compliant (see Section 8)

Applications

- Motion activated functions
- Free-fall detection
- Intelligent power saving for handheld devices
- Pedometer
- Display orientation
- Gaming and virtual reality input devices
- Impact recognition and logging
- Vibration monitoring and compensation



Description

The LIS302DLH is an ultra low-power high performance three axes linear accelerometer belonging to the "piccolo" family, with digital I²C/SPI serial interface standard output. The device features ultra low-power operational modes that allow advanced power saving and smart sleep to wake-up functions. The LIS302DLH has dynamically user selectable full scales of $\pm 2g \pm 4g \pm 8g$ and it is capable of measuring accelerations with output data rates from 0.5 Hz to 1 kHz. The self-test capability allows the user to check the functioning of the sensor in the final application. The device may be configured to generate interrupt signal by inertial wake-up/free-fall events as well as by the position of the device itself. Thresholds and timing of interrupt generators are programmable by the end user on the fly. The LIS302DLH is available in small thin plastic land grid array package (LGA) and it is guaranteed to operate over an extended temperature range from -40 °C to +85 °C.

National Semiconductor

LM2512

Mobile Pixel Link Level 0, 24-Bit RGB Display Interface

General Description

The LM2512 is a MPL Serializer (SER) that performs a 24-bit to 18-bit Dither operation and serialization of the video signals to Mobile Pixel Link (MPL) levels on only 3 or 4 active signals. An optional Look Up Table (Three X 256 X 8 bit RAM) is also provided for independent color correction. 18-bit Bufferless or partial buffer displays from QVGA (320 x 240) up to VGA (640 x 480) pixels can utilize a 24-bit video source. The interconnect is reduced from 28 signals to only 3 or 4 active signals with the LM2512 and companion deserializer easing flex interconnect design, size constraints and cost. The LM2512 SER resides by the application, graphics or baseband processor and translates the wide parallel video bus from LVCMOS levels to serial Mobile Pixel Link levels for transmission over a flex cable (or coax) and PCB traces to the DES located near or in the display module. When in Power_Down, the SER is put to sleep and draws less than 10 μ A. The link can also be powered down by stopping the PCLK (DES dependant) or by the PD* input pins. The LM2512 implements the physical layer of the MPL Level 0 Standard (MPL-0) and a 450 μ A I_{OM} current (Class 0).

The self-test capability allows the user to check the functioning of the sensor in the final application. The device may be configured to generate interrupt signal by inertial wake-up/free-fall events as well as by the position of the device itself. Thresholds and timing of interrupt generators are programmable by the end user on the fly. The LIS302DLH is available in small thin plastic land grid array package (LGA) and it is guaranteed to operate over an extended temperature range from -40 °C to +85 °C.

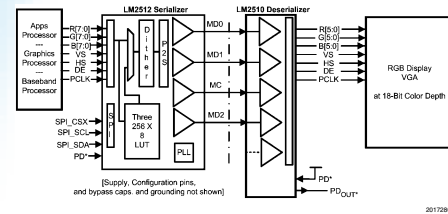
Features

- 24-bit RGB Display Interface support up to 640 x 480 VGA formats
- 24 to 18-bit Dithering
- Optional Look Up Table for independent color correction
- MPL-Level 0 Physical Layer
- SPI Interface for Look Up Table control and loading
- Low Power Consumption & Powerdown state
- Level translation between host and display
- Optional Auto Power Down on STOP PCLK
- Frame Sequence bits automatically resync upon data or clock error
- 1.6V to 2.0V core / analog supply voltage
- 1.6V to 3.0V I/O supply voltage range

System Benefits

- Dithered Data Reduction
- Independent RGB Color Correction
- 24-bit Color Input
- Small Interface
- Low Power
- Low EMI
- Intrinsic Level Translation

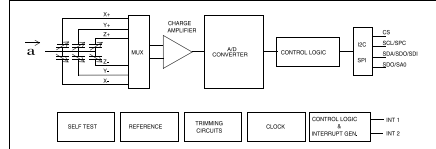
Typical 3 MD Lane Application Diagram - Bridge Chip



1 Block diagram and pin description

1.1 Block diagram

Figure 1. Block diagram



1.2 Pin description

Figure 2. Pin connection

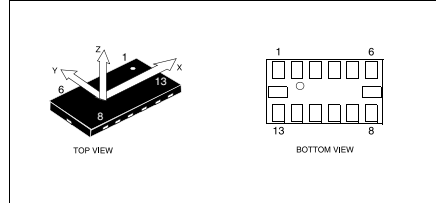


Table 2. Pin description

Pin#	Name	Function
1	Vdd_IO	Power supply for I/O pins
2	GND	0V supply
3	Reserved	Connect to Vdd
4	GND	0V supply
5	GND	0V supply
6	Vdd	Power supply
7	CS	SPI enable
8	INT1	Inertial interrupt 1
9	INT2	Inertial interrupt 2
10	GND	0V supply
11	Reserved	Connect to Gnd
12	SDO	SPI serial data output
13	SDA	I ² C serial data (SDA)
14	SCL	I ² C serial clock (SCL)

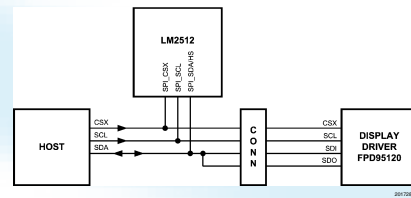


FIGURE 13. LM2512 WRITE & READ to 3-signal SPI HOST

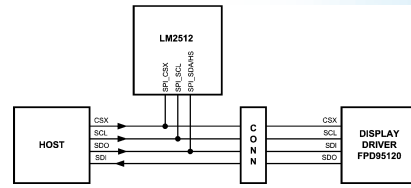


FIGURE 14. LM2512 WRITE only to 4-signal SPI HOST

National Semiconductor

LP3986

Dual Micropower 150 mA Ultra Low-Dropout CMOS Voltage Regulators in micro SMD Package

General Description

The LP3986 is a 150 mA dual low dropout regulator designed for portable and wireless applications with demanding performance and board space requirements. The LP3986 is stable with a small 1 μ F $\pm$ 30% ceramic output capacitor requiring smallest possible board space. The LP3986's performance is optimized for battery powered systems to deliver ultra low noise, extremely low dropout voltage and low quiescent current independent of load current. Regulator ground current increases very slightly in dropout, further prolonging the battery life. Optional external bypass capacitor reduces the output noise further without slowing down the load transient response. Fast start-up time is achieved by utilizing a speed-up circuit that actively pre-charges the bypass capacitor. Power supply rejection is better than 60 dB at low frequencies and 55 dB at 10 kHz. High power supply rejection is maintained at low input voltage levels common to battery operated circuits. The LP3986 is available in a micro SMD package. Performance is specified for a -40 °C to +125 °C temperature range. For single LDO applications, please refer to the LP3985 datasheet.

Features

- Miniature 8-I/O micro SMD package
- Stable with 1 μ F ceramic and high quality tantalum output capacitors
- Fast turn-on
- Two independent regulators
- Logic controlled enable
- Over current and thermal protection

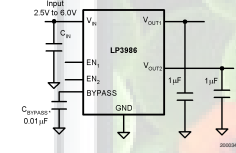
Key Specifications

- Guaranteed 150 mA output current per regulator
- 1 nA typical quiescent current when both regulators in shutdown mode
- 60 mV typical dropout voltage at 150 mA output current
- 115 μ A typical ground current
- 40 μ A typical output noise
- 200 μ s fast turn-on circuit
- 40 °C to +125 °C junction temperature

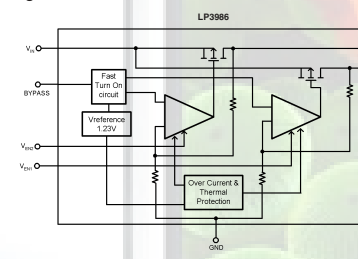
Applications

- CDMA cellular handsets
- GSM cellular handsets
- Portable information appliances
- Portable battery applications

Typical Application Circuit



Block Diagram

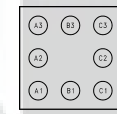


Pin Description

Name	*micro SMD	Function
V _{OUT2}	A1	Output Voltage of the second LDO
EN ₂	B1	Enable input for the second LDO
BYPASS	C1	Bypass capacitor for the bandgap
GND	C2	Common ground
GND	C3	Common ground
EN ₁	B3	Enable input for the first LDO
V _{OUT1}	A3	Output Voltage of the first LDO
V _{IN}	A2	Common input for both LDOs

*Note: The pin numbering scheme for the micro SMD package was revised in April 2002 to conform to JEDEC standard. Only the pin numbers were revised. No changes to the physical location of the inputs/outputs were made. For reference purposes, the obsolete numbering scheme had V_{OUT2} as pin 1, EN₂ as pin 2, BYPASS as pin 3, GND as pins 4 and 5, EN₁ as pin 6, V_{OUT1} as pin 7, and V_{IN} as pin 8.

Connection Diagram



Top View
8 Bump micro SMD Package
See NS Package Number BLA08

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اطلاعات فنی برخی از آی سی های بکار رفته در گوشی



1.2A, 750kHz Step-Down
Switching Regulator in

LT3493-3

FEATURES

- Wide Input Range: 6.8V to 36V Operating, 40V Maximum
- 1.2A Output Current
- Fixed Frequency Operation: 750kHz
- Output Adjustable Down to 780mV
- Short-Circuit Robust
- Uses Tiny Capacitors and Inductors
- Soft-Start
- Internally Compensated
- Low Shutdown Current: <2μA
- Low $V_{CE\text{SAT}}$ Switch: 330mV at 1A
- Thermally Enhanced, Low Profile 2mm × 3mm DFN-6 Package

DESCRIPTION

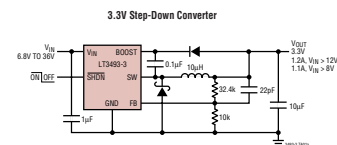
The LT[®]3493-3 is a current mode PWM step-down DC/DC converter with an internal 1.75A power switch. The wide operating input range of 6.8V to 36V (40V maximum) makes the LT3493-3 ideal for regulating power from a wide variety of sources, including unregulated wall transformers, 24V industrial supplies and automotive batteries. Its high operating frequency allows the use of tiny, low cost inductors and ceramic capacitors, resulting in low, predictable output ripple.

Cycle-by-cycle current limit provides protection against shorted outputs and soft-start eliminates input current surge during start-up. The low current (<2μA) shutdown mode provides output disconnect, enabling easy power management in battery-powered systems.

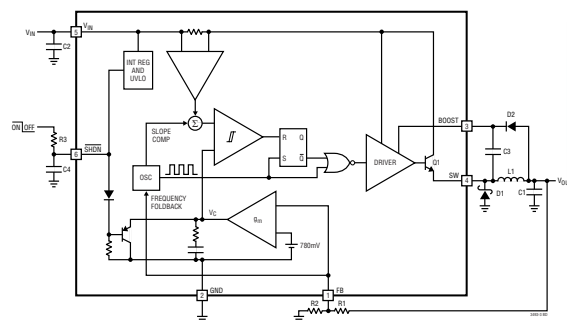
APPLICATIONS

- Automotive Battery Regulation
- Industrial Control Supplies
- Wall Transformer Regulation
- Distributed Supply Regulation
- Battery-Powered Equipment

TYPICAL APPLICATION



BLOCK DIAGRAM



USB Power Controller and
Li-Ion Linear Charger with
Low Loss Ideal Diode

LTC4066/LTC4066-1

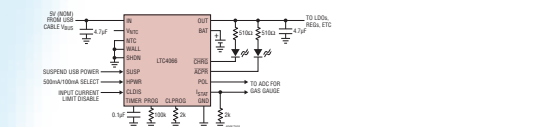
FEATURES

- Seamless Transition Between Input Power Sources: Li-Ion Battery, USB and 5V Wall Adapter
- Low Loss (50mΩ) Ideal Diode Path from BAT to OUT
- Programmable Charge Current Detection (CHRG)
- Load Dependent Charging Guarantees USB Input Current Compliance
- Analog Gas Gauge Function
- Charges Single Cell Li-Ion Batteries Directly from USB Port
- Constant-Current/Constant-Voltage Operation with Thermal Feedback to Maximize Charging Rate Without Risk of Overheating
- Selectable 100% or 20% Current Limit (e.g., 500mA/100mA)
- Termination Timer Adapts to Actual Charge Current
- Preset 4.2V Charge Voltage with 0.8% Accuracy (4.1V for LTC4066-1)
- NTC Thermistor Input for Temperature Qualified Charging
- Thin Profile (0.75mm) 24-Lead 4mm × 4mm QFN Package
- Ultrathin Profile (0.55mm) 24-Lead 4mm × 4mm UTOFN Package (LTC4066 Only)

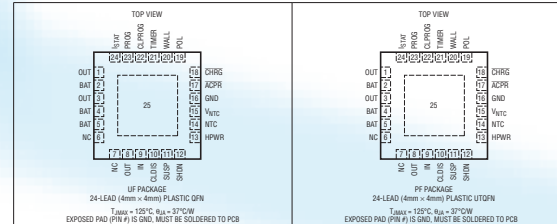
APPLICATIONS

- Portable USB Devices
- GPS, Cameras, Broadband Wireless Modems
- Multiple Input Chargers

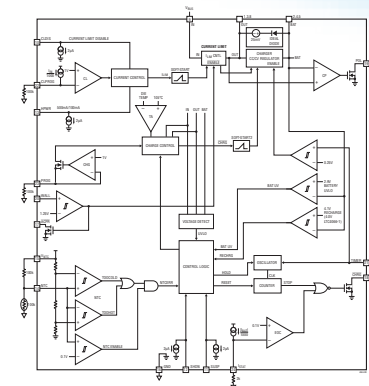
TYPICAL APPLICATION



PIN CONFIGURATION



BLOCK DIAGRAM



Low-Cost, SOT23, Micropower, High-Side
Current-Sense Amplifier with Voltage Output

MAX4372T/F/H

General Description

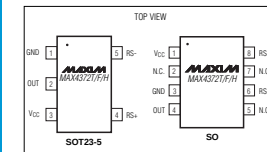
The MAX4372 low-cost, precision, high-side current-sense amplifier is available in a tiny, space-saving SOT23-5 package. Offered in three gain versions (T = +20V/V, F = +50V/V, and H = +100V/V), this device operates from a single +2.7V to +28V supply and consumes only 30μA. It features a voltage output that eliminates the need for gain-setting resistors and is ideal for today's notebook computers, cell phones, and other systems where battery/DC current monitoring is critical. High-side current monitoring is especially useful in battery-powered systems since it does not interfere with the ground path of the battery charger. The input common-mode range of 0 to +28V is independent of the supply voltage and ensures that the current-sense feedback remains viable even when connected to a 2-cell battery pack in deep discharge.

The user can set the full-scale current reading by choosing the device (T, F, or H) with the desired voltage gain and selecting the appropriate external sense resistor. This capability offers a high level of integration and flexibility, resulting in a simple and compact current-sense solution. For higher bandwidth applications, refer to the MAX4173T/F/H data sheet.

Applications

- Power-Management Systems
- General-System/Board-Level Current Monitoring
- Notebook Computers
- Portable/Battery-Powered Systems
- Smart-Battery Packs/Chargers
- Cell Phones
- Precision-Current Sources

Pin Configurations



Typical Operating Circuit

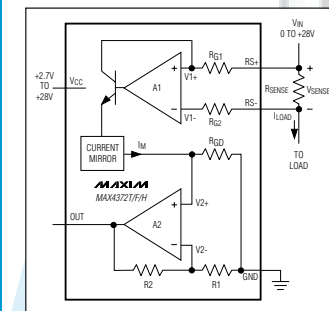
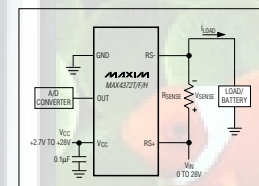


Figure 1. Functional Diagram

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وب سایت:
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IPHONE

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اطلاعات فنی برخی از آی سی های بکار رفته در گوشی

PMB 6811 S/M POWER Power Management for Cellular Systems



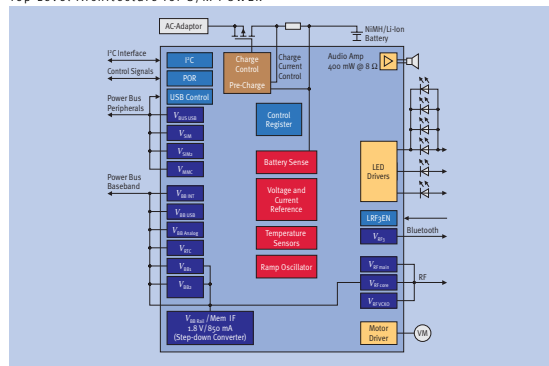
S/M POWER is a highly integrated Power and Battery Management IC for mobile handsets and provides all power supply functions for complete systems ranging from GSM over GPRS up to EDGE smart phones and modules. It has been optimized for usage with Infineon's S-GOLD family based systems in conjunction with cellular RF transceiver like SMARTI-DC and SMARTI-SD as well as Infineon's single chip solution for Bluetooth. The low power system performance required in market demanding feature rich terminals can be ensured with this advanced power management concept at best in class system costs and highest system integration level.

Applications

- System Powermanagement IC for all GSM/GPRS/EDGE Mobile Phones and Data Modules

- Features**
- Support of dedicated standby power-down concept for S-GOLD family
 - Charger for NiMH and Li-Ion/Polymer batteries including precharge current generator
 - Highly efficient DC/DC step-down converter
 - Low-drop-out (LDO) regulators for system memory devices
 - LDO regulators for baseband I/O supply
 - Low-noise LDO regulators for RF devices
 - LDO regulator for analog mixed-signal section of S-GOLD
 - Supply for Infineon's single chip solution Bluetooth Single
 - USB interface support for peripheral and mini-host mode
 - Vibra driver fully programmable
 - 400 mW Audio amplifier for handsfree and Polyringer
 - RTC regulator with ultra-low quiescent current
 - Backlight LEDs driver with dimming function
 - Two single LED driver outputs for signalling
 - Fully controllable by software via I²C-Bus
 - Interrupt channels for peripherals
 - System debug mode
 - Based on robust 0.5 µm BiCMOS technology

Top Level Architecture for S/M POWER



PMB 8876 S-GOLD2™ Multimedia Engine with Advanced EDGE Modem Functionality

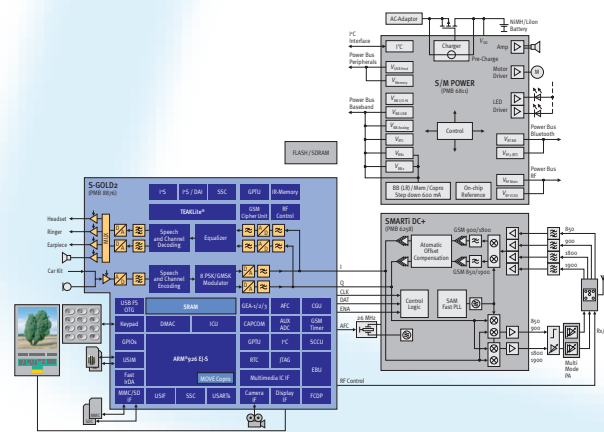


S-GOLD2™ is the latest member of Infineon's successful S-GOLD® baseband family. It combines advanced EDGE modem technology with the latest multimedia functions required for tomorrow's mobile phones. Its unique architecture makes S-GOLD2™ the ideal fit for feature-enhanced terminals, allowing for minimum cost system solutions at minimum space requirements. Centered around the powerful ARM®926 CPU, S-GOLD2™ provides the horsepower needed for power-greedy software applications. Additionally it hosts on-chip hardware for the latest multimedia features, such as high-resolution display interface, dedicated camera interface, hardware support for MPEG4 encoding, Java hardware accelerator, and a large number of connectivity peripherals. MMS for still picture and video, 3D gaming, Java applications, 3GPP compliant video streaming are just a few of the latest applications that are easily supported with S-GOLD2™. S-GOLD2™s high integration level of the key feature set keeps system size and cost at a minimum. To accommodate for more demanding feature requirements S-GOLD2™ can easily be upgraded with multimedia ICs via its standardized multimedia interface. Its architecture provides the scalability needed to enable cost-efficient as well as top-of-the-line phones with a single baseband IC. Combined with Infineon's SMARTI™ RF devices and S/M POWER™ power management ICs, S-GOLD2™ allows for a true 3-chip quad-band EDGE solution.

Applications

- GSM/E-GPRS/GPRS multimedia phones with tomorrow's multimedia requirements
 - Minimum space E-GPRS/GPRS data modules supporting up to multislot class 12
- Key Benefits**
- High integration level of key multimedia features allowing for minimum cost system solutions with the right feature set
 - Proven leading-edge modem technology with second generation E-GPRS evolution
 - Feature flexibility through upgrade options with multimedia chips via standardized interface
 - Connectivity to Bluetooth, FM Radio, WLAN, A-GPS and other modules
 - Software compatibility to other members of the S-GOLD® family
 - Complete software suite available from Layers up to application software based on APOXI™ API
 - 3G upgradeable with WCDMA coprocessor

Example for Quad-Band E-GPRS Solution



- Key Application Features**
- ARM®926 based single modem and application processor with cache support and fast tightly-coupled memories
 - Parallel/serial display interface supporting high resolution color displays
 - ITU-R BT.656 compliant camera interface supporting camera applications of up to 2 MPixel
 - MPEG4 (H.263 encoder hardware (MOVE® coprocessor)
 - MMC/SD interface, SD I/O capable
 - USB 2.0 on-the-go, full speed
 - Fast I/O
 - Dedicated NAND flash controller supporting burst mode and error detection
 - Standardized multimedia extension interface (MMIC-IF) supporting external hardware accelerator ICs such as complex display/camera modules or graphic accelerators
 - 3 bi-directional digital audio interfaces (I²S) to connect audio companion ICs and Bluetooth modules
 - Support for video streaming
- Key Modem Features**
- GSM/E-GPRS/GPRS modem supporting up to multislot class 12
 - FR, HR, EFR, AMR, HSCSD class 10
 - SATC
 - DTM class 9
 - Polyphonic ringer support for up to 40 voices
 - Up to 48 kHz sampling rate
 - MP3 decoder
 - Echo cancellation/noise reduction
 - GTT/TTY

SST39WF800A 8 Mbit (x16) Multi-Purpose Flash

FEATURES:

- Organized as 512K x16
- Single Voltage Read and Write Operations
 - 1.65-1.95V
- Superior Reliability
 - Endurance: 100,000 Cycles (typical)
 - Greater than 100 years Data Retention
- Low Power Consumption (typical values at 5 MHz)
 - Active Current: 5 mA (typical)
 - Standby Current: 5 µA (typical)
- Sector-Erase Capability
 - Uniform 2 KWord sectors
- Block-Erase Capability
 - Uniform 32 KWord blocks
- Fast Read Access Time
 - 90 ns
- Latched Address and Data

PRODUCT DESCRIPTION

The SST39WF800A device is a 512K x16 CMOS Multi-Purpose Flash (MPF) manufactured with SST's proprietary, high performance CMOS SuperFlash technology. The split-gate cell design and thick-oxide tunneling injector attain better reliability and manufacturability compared with alternate approaches. The SST39WF800A writes (Program or Erase) with a 1.65-1.95V power supply. This device conforms to JEDEC standard pin assignments for x16 memories.

Featuring high-performance Word-Program, the SST39WF800A device provides a typical Word-Program time of 28 µsec. The device uses Toggle Bit or Data Polling to detect the completion of the Program or Erase operation. To protect against inadvertent writes, it has on-chip hardware and software data protection schemes. Designed, manufactured, and tested for a wide spectrum of applications, this device is offered with a guaranteed typical endurance of 100,000 cycles. Data retention is rated at greater than 100 years.

The SST39WF800A device is suited for applications that require convenient and economical updating of program, configuration, or data memory. For all system applications, it significantly improves performance and reliability, while lowering power consumption. It inherently uses less energy

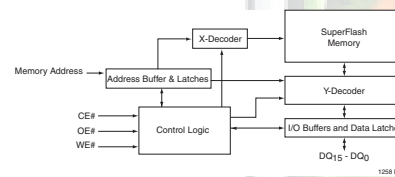


FIGURE 1: Functional Block Diagram

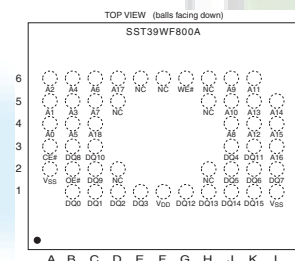
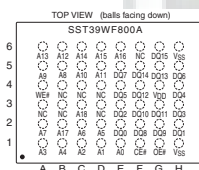


FIGURE 2: Pin Assignments for 48-Ball WFBGA and 48-Ball XFLGA



TPS61045



DIGITALLY ADJUSTABLE LCD BOOST CONVERTER

DESCRIPTION

The TPS61045 is a high frequency boost converter with digitally programmable output voltage and true shutdown. During shutdown the output is disconnected from the input by opening the internal input switch. This allows a controlled power up/down sequencing of the display. The output voltage can be increased or decreased in digital steps by applying a logic signal to the CTRL pin. The output voltage range, as well as the output voltage step size, can be programmed with the feedback divider network. With a high switching frequency of up to 1 MHz the TPS61045 allows the use of small external components and together, with the small 8-pin QFN package, a minimum system solution size is achieved.

FEATURES

- Input Voltage Range . . . 1.8 V to 6.0 V
- Up to 85% Efficiency
- Digitally Adjustable Output Voltage Control
- Disconnects Output From Input During Shutdown
- Switching Frequency . . . Up to 1 MHz
- No Load Quiescent Current . . . 40 µA Typ
- Thermal Shutdown Mode
- Shutdown Current . . . 0.1 µA Typ
- Available in Small 3mm x 3mm QFN package

APPLICATIONS

- LCD Bias Supply For Small to Medium LCD Displays
- OLED Display Power Supply
 - PDA, Pocket PC, Smart Phones
 - Handheld Devices
 - Cellular Phones

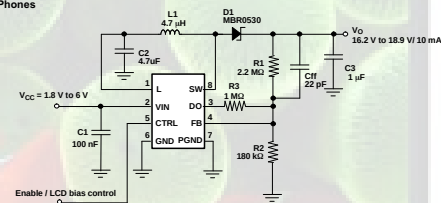
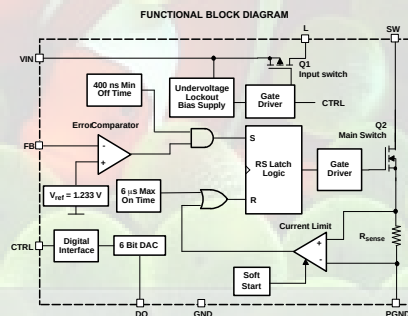


Figure 1. Typical Application



TYPICAL APPLICATIONS

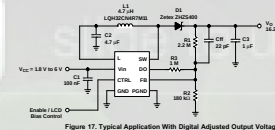


Figure 17. Typical Application With Digital Adjusted Output Voltage

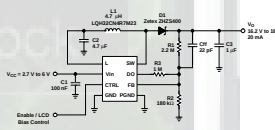


Figure 18. Typical Application With Analog Adjusted Output Voltage



IPHONE

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