

# ACEK 3354-7P

SMARC Starter-Kit, TI Sitara™ AM3354, ARM® Cortex™ A8  
Bootable SD, DDR3 512MB, eMMC 4GB on ACES 3354  
Integrated ACEB-35 with 7" LVDS/ WVGA, 7" Capacitive Touch



## Main Features

- SMARC STD 1.0 compliant ARM® Cortex™ A8 Starter-Kit
- TI- AM3354, ARM® Cortex™ A8 720MHz, build-in SGX530 Graphic Accelerator
- Onboard 512MB DDR3, 4GB eMMC and bootable SD on the carrier board
- Support GbE, USB, USB-OTG, 2UART, Audio, DCAN, I2S, 3x I2C and 8 x GPIO
- Build-in 7" LVDS LCD, WVGA with 7" capacitive Touch
- Integrated AC/ DC adaptor for DC + 12V @ 3A input
- BSP ready to support Windows Compact 7.0

## Product Overview

NEXCOM ACEK 3354-7P is an SMARC Starter Kit based-on ARM® Cortex™ A8 processor onto ACES 3354 that plugged in ACEB-35 carrier board with 7" LVDS LCD, 7" capacitive touch and integrated an AC/ DC 36W power adaptor by DC + 12V input. This starter-kit is assembly for engineer to develop their ARM-based industrial/ embedded device or equipment.

The ACES 3354 SMARC module embedded Texas Instruments Sitara AM3354 ARM® Cortex™ A8 processor features low power and high performance graphic-accelerated by SGX530 core to support industrial API standard Direct3D Mobile, OpenGL ES1.1 and 2.0, OpenVG 1.0.1. The ACES 3354 build-in system memory with 512MB DDR3 and SPI flash with bootable 4GB eMMC by SDIO interface. The ACES 3354 support 24-bit LVDS or TTL LCD screen resolution up to 1366 x 768, offering either capacitive or resistive touch.

The ACEK 3354-7P works as application BSP-ready for Windows Embedded Compact 7.0 at the first stage evaluation and future development plan for Linux Kernel 3.2.x and Android 4.2.x. NEXCOM provide embedded software customization service to enable customer new project rapidly deploy an operating system and fully utilize the features of the underlying hardware platform that may configure to support the desired peripherals, operating system.

NEXCOM share the same pin-out standard of SMARC, the developers can easily migrate to a higher or lower-end SMARC from customization to full ODM board design. ACES 3354 SMARC is the ideal ARM-based solution platform for Human Machine Interfaces, Industrial Automation, Industrial control, Remote monitoring devices. Embedded system applications like Connected Vending Machines, Weighing Scales, Consumer Medical Appliances, Educational Consoles and Smart Toll System.

## Specifications

### Form factor

- ACES 3354 : SMARC STD 1.0 compliance with 314pins connector, 82 x 50mm
- ACEB-35 : SMARC STD 1.0 compliance with 314pins socket, 146 x 105 x 16mm (height)
- ACEK 3354-7P : Bakelite Tabletop Box, 260 x 135 x 60mm (height)

### Processor

- Build-in Texas Instruments AM3354 ZCZ 324-pin PBGA, Cortex™ A8 up to 720MHz

### Power Management IC

- PMIC TPS65910A3 integrated w/4 DC/DCs, 8 LDOs and RTC in 6 x 6mm QFN

### System Memory

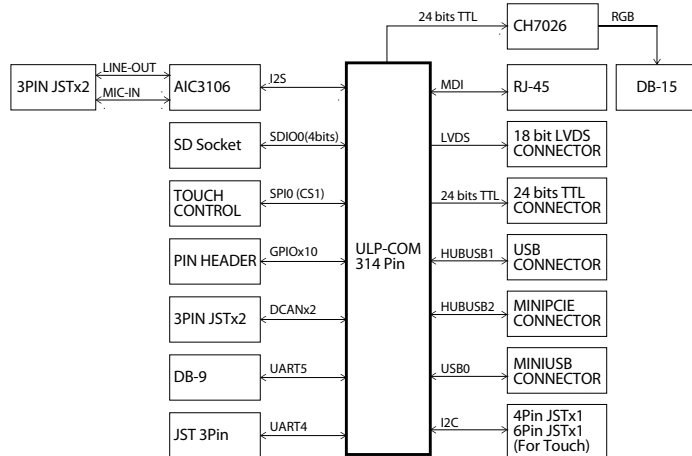
- SDRAM : DDR3 512MB
- Flash : eMMC 4GB (compliant eMMC 4.41)
- SPI Flash : 8Mbit

### Display

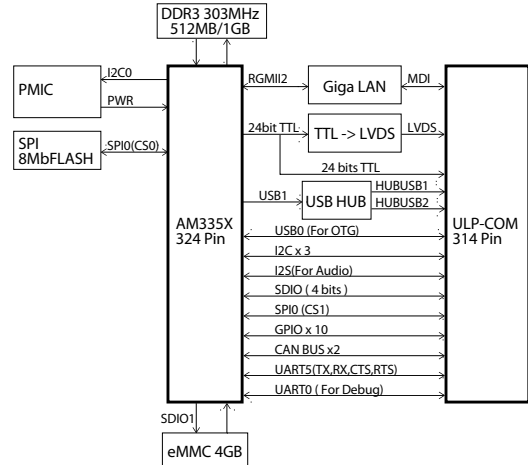
- Graphic Accelerator : SGX530 2D/ 3D Accelerator
  - Industry-Standard API support : Direct3D Mobile, OpenGL ES1.1 and 2.0, OpenVG 1.0.1
  - Support (USSE) Universal Scalable Shader Engine
- Display Interfaces
  - LVDS : Default 800 x 480 (24bit) for 7" LCD/ LVDS
  - TTL : Reserved design interface for resolution up to 1024 x 768@60Hz
- 7" LVDS Display : 7" WVGA (800 x 480) default LCD for

## Dimension Drawing

Block Diagram of ACEB-35/ ULP-COM Carrier Board (146 x 105mm)



Block Diagram of ACES 3354/ ULP-COM Module (82 x 50mm)



### ACEK 3354-7P starter-kit

- LED backlight
- 7" Touch : 7" Projected Capacitive Touch Panel
- Default single point touch for Windows Compact 7.0
- Optional multi touch up to 5 x points

### Connectivity

- Network : 1 x Gigabit Ethernet by RJ45
- USB#0 : Onboard USB Hub GENESYS: GL850G for 2 x USB 2.0 Host
- USB#1 : USB-OTG by Mini AB type connector
- SDIO : up to 2 x MMC/ SD
- UART4 : (TX, RX, CTS#, RTS#) 1 x for Debug
- UART5 : DB9, RS232/ RS422/ RS485 pre-selected by SW2
- 16C750 compatibility
- Auto-baud between 1200 bps and 115.2 Kbps
- SPI : One Serial Peripheral Interface (SPI) interfaces
- I2C : Two Inter-Integrated Circuit interfaces
- General Purpose I/O : Programmable 8 x GPIO signals on JP4 10-pins header
- DCAN: Dual CAN interfaces support bitrates up to 1 Mbit/s CAN 2.0B protocol (ISO 11898-1)
- Logic level signals from Module based CAN bus protocol controllers RXD, TXD only
- Two Module GPIOs reserved for optional use as CAN bus error status
- Audio Code : TLV320AIC3101
- Speaker-out : 1W/ch. Into 8Ω at 5V
- Watchdog Timer interface

### Boot Source

- SPI Flash from ACES 3354
- eMMC Flash from ACES 3354
- SD Card from carrier ACEB-35
- SC Card : WinCE 7
- eMMC : Linux

### System Environment

- Power Input: DC 5V +/- 5% ( supply by ULP-COM/ MXM3.0 interface)
- Power Consumption : DC + 5V/ 0.4A typical 2.0W to 3.2W during active operation
- Dimensions: 10
- Environment
- Operating temperatures : 0°C to 40°C
- Storage temperature : -20°C to 85°C
- Relative humidity : 10% to 90%, (Non-condensing)
- Certifications : Meet CE/ FCC class A

### BSP Support

- The Board Support Package for Windows Compact 7.0 includes some different levels software
- MLO : CPU loader
- EBOOT : Bootloader
- NK : Windows Compact 7.0 OS IMAGE

## Ordering Information

- **ACES3354 (P/N : ULP-COM module are subject to request)**  
SMARC module AM3354 Cortex™ A8 720MHz, 512MB DDR3, 4GB eMMC, GbE, USB, USB-OTG, 82 x 50mm
- **ACEB-35 (P/N : ULP-COM module are subject to request)**  
SMARCCarrier Board 146 x 105mm with MXM3.0/ 314 pins socket, GbE, USB, USB-OTG, COM, VGA/ LVDS/ TTL, MIC-in/ Speaker-out, DCAN, I2C, DC Jack +12V input
- **ACEK3354-7P (P/N : ULP-COM module are subject to request)**  
SMARC ARM® Cortex™ A8 Starter-Kit integrated ACES 3354 onto ACEB-35 carrier board with 7" LVDS LCD and 7" capacitive touch with AC/ DC+12V power adapter AC110/ 240V input