



IPT-BF537 developer kit by IP-THINKING

IPT-BF537 is the world's first Analog Devices™ Blackfin® 537 DSP based developer kit, which can display output in full VGA quality.

IPT-BF537 is delivered with an integrated 6.5" industrial grade VGA TFT display with touch in a sandwich construction, running the uClinux operating system and includes a series of high quality applications, supplied with full source code so the developer really can get stuck in from the outset!

IPT-BF537 is the perfect developer kit for developing a vast variety of electronic equipment, including:

• Industrial VoIP terminals	• Consumer VoIP terminals	• IP PBX
• Internet security products	• Network security products	• Digital metering equipment
• Industrial controls	• Remote meter readers	• Tele care terminals
• Tele health terminals	• Medico equipment	• Instrumentation
• Auto motive equipment	• Pro-audio equipment	• Entertainment equipment
• Media centres	• Military equipment	• Etc. etc.

The compact IPT-BF537 developer kit only takes up a minimum amount of space – in fact no more than it can be hidden completely behind the industrial grade touch sensitive 6.5" VGA TFT display.



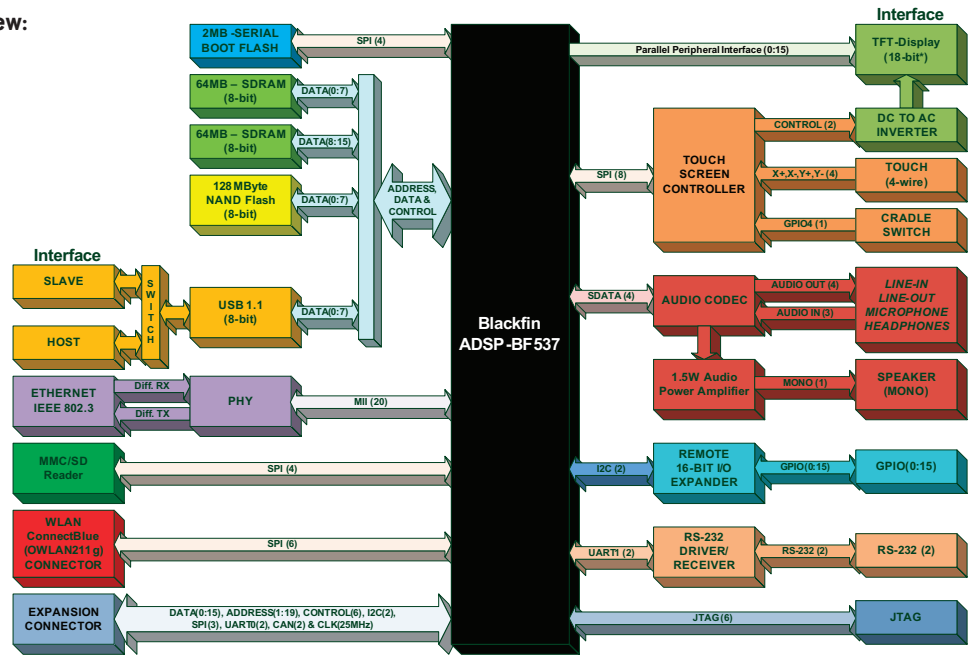
Telephone handset is not supplied with the IPT-BF537 developer kit, but can be ordered separately.





The IPT-BF537 developer kit is supported by a comprehensive documentation manual, including schematics and BOM which, together with several useful applications with source codes (please see the back for details), make the IPT-BF537 developer kit easily accessible for developers, reducing the development time, development cost and time to market of your new products dramatically.

System Overview:



The board features:

Processor

- ADSP-BF537 Blackfin processor from Analog Devices
- Core performance up to 600 MHz (Running uClinux at 525 MHz)
- External bus performance up to 133 MHz (Running uClinux at 131 MHz)
- 182-pin mini-BGA package
- 25 MHz oscillator

Synchronous dynamic random access memory (SDRAM)

- MT48LC64M8A2P-75 (16 Mega x 8 x 4 banks), 2 x 64 MByte chips (totalling 128MByte)

Serial Flash memory

- M25P16 is a 16 Mbit or 2 Mbyte (Used for u-boot and MAC address)

NAND Flash memory

- NAND01G is a 1 Gbit or 128 Mbyte NAND Flash memory (Used for uClinux and software applications)

Analog audio interface

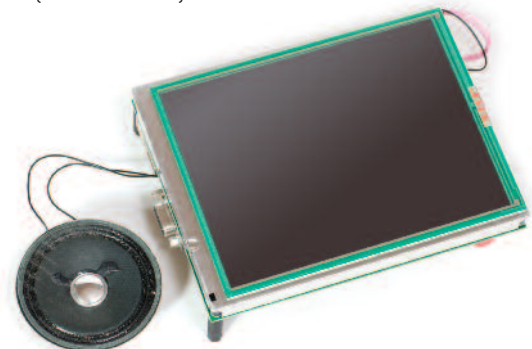
- AD1981BL AC '97 SoundMAX codec
- Stereo full-duplex codec 20-bit PCM DAC, supporting 7040 Hz to 48 KHz sample rates with 1 Hz resolution.
- Integrated stereo headphone amplifier
- Standard 3.5 mm stereo Jack connectors, for headphones, Microphone, line-in & line-out (SHALLIN K36406)
- Jack modular 4/4, for headset connection in mono left channel (MOLEX 855025005)
- SSM2211SZ 1.5 Watt Audio Power Amplifier for mono loudspeaker
- Loudspeaker connector (MOLEX 533980271)

Ethernet interface (LAN)

- LAN8700 Single-Chip Ethernet Physical Layer Transceiver (PHY)
- Compliant with IEEE 802.3-2005
- 10-BaseT (10 Mbits/sec) and 100-BaseT (100 Mbits/sec)
- Media Independent Interface (MII)
- Ethernet Media Access Controller (MAC)
- 2 LEDs that indicate 10/100 Mbs and full/half duplex
- RJ45 Ethernet connector with 2 LEDs that indicate LINK and ACTIVITY

DC to AC Inverter interface

- Designed for 65PW061, 4 W Dual output Backlight converter with dimming function
- Inverter connector (MOLEX 532610871)





Universal asynchronous receiver/transmitter (UART)

- ADM3101EACPZ
- RS232 Serial interface via UART1
- DSUB connector
- Universal Serial Bus interface
- SL811HS is a Cypress USB 1.1 Host/Slave Controller, with option for Host or Slave mode
- Limited to Low-Speed when using TFT-Display in VGA mode
- Jumper selection for Host/Slave mode setup
- USB connector type A for Host mode
- USB connector type B for Slave mode^A

TFT-Display (16-bit Parallel Peripheral Interface)

- Designed for NEC NL6448BC20-18D
- 18bit TFT Panel (6-bit digital RGB signals)
- Resolution 640 x 480 pixels (VGA)
- LCD Interface connector (Hirose DF9-31S-1V W(31))

Touch screen controller interface

- AD7877 Touch Screen Controller
- Standard 4-wire Resistive Touch Panel
- Touch screen connector (TYCO ELECTRONICS 84953-4)
- GPIO1 to Display On/Off
- GPIO2 from Interrupt WLAN
- GPIO3 from Interrupt I/O expander
- GPIO4 from cradle switch connector (MOLEX 533980271)

I/O - Expander

- PCF8575 Remote 16-bit I/O expander for I2C-bus
- Port 00-07 is populate with 10ohm series resistor for 4x4 keypad
- Port 10-17 is populate with 10Kohm pull-up resistor for LCD Display Interface
- Connector type (Samtec TSM-110-01-L-DV)

MMC/SD-Card reader via SPI^{A)}

- Reader (YAMAICHI ELECTRONICS FPS009-2405-0)

Expansion connector (Optional)

- 16-bit Data bus (D0-D15)
- 20-bit Address bus (A1-A19)
- Control signal (Reset, AMS2 to AMS3, AWE, ARE)
- CLK BUF (25 MHz)
- CAN Bus
- I2C Bus
- Interrupt for I2C
- SPI Bus
- UART0
- Connector type (Samtec SFC-130-T2-F-D-A)

WiFi Add-on-module (Optional)^{A)}

- OWLAN211g from connectBlue
- Connector type (Samtec TLE-110-01-G-DV-A)

Debugging

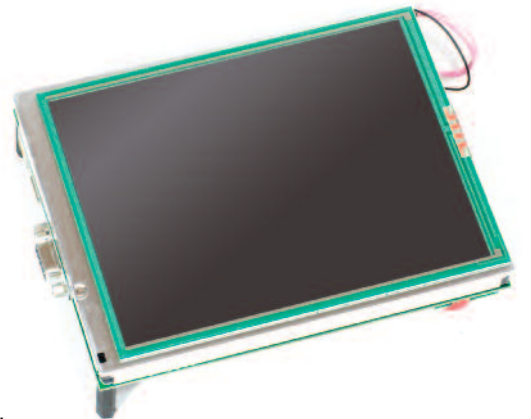
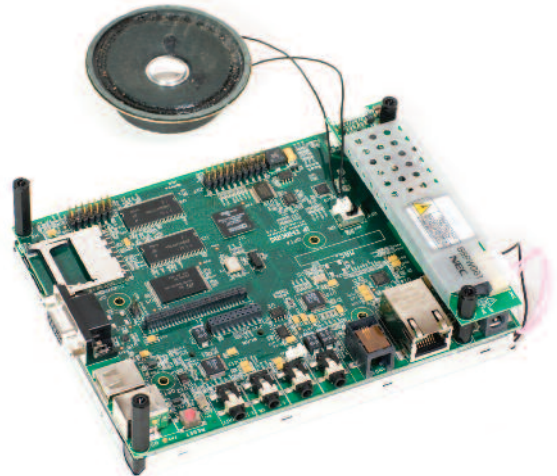
- JTAG ICE 14-pin header
- Connector type (Samtec TSM-107-01-L-DV)
- Compatible with Analog Devices ADZS-HPUSB-ICE

Power consumption without USB unit, WLAN module and Expansion-board connected

- Booting: 2.5 W
- Idle mode: 2 W
- Max brightness at TFT-display: 8,2 W
- Min brightness at TFT-display: 4 W
- Max power for the standard board: 9 W

Software features:

The IPT-BF537 developer kit, which run the uClinux operating system, comes pre-loaded with a series of application software, documented by the accompanying DVD with all source codes.



Operating system:	uClinux ver. 2.6.x
Applications	
Installed:	Planned ^{B)} :
SIP VoIP client	Internet browser
Image viewer	e-mail viewer
File viewer	"click2dial" Contact database
Music player	Streaming VOX media player
Control panel	On-board software keypad

^{A)} NOT VERIFIED – Driver not available from IP-THINKING! ^{B)} Planned applications, not necessary in the initial software package!

