Fastrax DB600

Development Board

- For IT600 OEM receiver
- GPS/Galileo/Glonass receiver
- DR & MEMS support
- JTAG for debugging (Lauterbach ICE)
- Access to all IT600 signals
- SDK with ARM Realview 3.0 compiler support

Full fledged development environment

DB600 provides access to all IT600 GNSS receiver interfaces. DB600 is also a reference design for using IT600. It plugs into Fastrax standard Mini Evkit frame. The two main UART ports are available on the Mini Evkit, the third UART is available either on the USB connector (as USB), or on the pin-header as serial port. Reset button is also available on the Mini Evkit whereas DB600 contains the other control buttons (Boot, Standby and Wakeup). Software development is supported through the JTAG connector. Lauterbach In-Circuit Emulator and ARM Realview 3.0 compiler are supported. GNU compiler support will be available later during 2011. DB600 contains a versatile set of MEMS sensors. All MEMS sensors and an E^{2}PROM are accessed through I2C bus. The user can develop custom sensor libraries and algorithms with the SDK. Standard firmware supports 3-axis digital gyro and odometer signals for DR. Later on DWP information from CAN interface will also be supported for DR. DB600 contains a CAN driver for the physical interface. I2C and SPI signals are available at connectors also for connecting external devices.
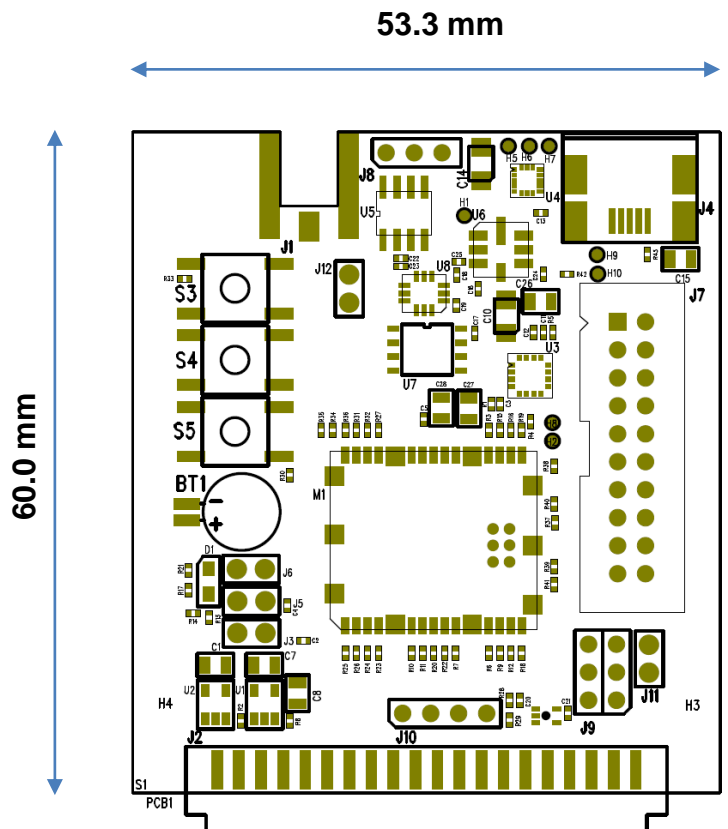
There is also an Application Board (AP600) available. It is the same PCB as DB600 but with different assembly options. The only sensor mounted on AP600 is the 3-axis digital Gyro. JTAG connector is also left out. CAN driver is also missing.

Signal Interfaces

J1:	Active GNSS antenna input
J2:	40-pin Mini Evkit connector
J3:	VDD3V3 supply header
J4:	USB (UART1) connector
J5:	VDD1V8 supply header
J6:	VBAT supply header
J7:	JTAG connector
J8:	CAN interface
J9:	SPI interface connector
J10:	2xADC and ODOMETER inputs
J11:	UART1 header
J12:	I2C signal header
S3:	WAKEUP button
S4:	STANDBY button
S5:	BOOT button

Main Components

M1:	IT600 OEM Receiver
U1:	3.3V regulator
U2:	1.8V regulator
U3:	3-axis Gyroscope
U4:	3-axis Accelerometer
U5:	CAN driver
U6:	Pressure Sensor
U7:	E^{2}PROM
U8:	3-axis Magnetometer

53.3 mm

60.0 mm

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smart *positioning*

Block Diagram

IT600
Top View

Pin	Signal		Pin	Signal
1	ADC1_IN		30	XRESET
2	ADC5_IN		29	XSTANDBY
3	UART1_TX/USB_DM		28	WAKEUP
4	UART1_RX/USB_DP		27	ODO_IN
5	GND		26	GND
6	UART0_RX		25	RFIN
7	UART0_TX		24	GND
8	UART2_RX		23	VBAT
9	UART2_TX		22	VDD1V8
10	1PPS		21	VDD3V3
11	GND		20	GND
12	SPI_DI		19	CAN0TX
13	SPI_DO		18	CAN0RX
14	SPI_CLK		17	CAN1TX/I2C_SD
15	SPI_CSN		16	CAN1RX/I2C_SCLK

GND 36, GND 35, GND 34

GND 37, TCK 38, TRSTN 39
TDO 42, TDI 41, TMS 40

GND 31, GND 32, GND 33

J10, J4, J11, J2, J9, J7

S3&S4, J10, J1, Power Mgmt

Can Driver — U5 — J8
J12

I2C bus

U3 — 3-Axis Gyro
U4 — 3-Axis Accelerometer
U6 — Pressure Sensor
U7 — EEPROM
U8 — 3-Axis Magnetometer

J2

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