

HARDWARE BILL OF MATERIALS (HBOM)

Sample Electronics Manufacturing Inc.

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Product Name:	Example IoT Sensor Module	BOM Date:	January 15, 2025	Project Code:	PROJ-2025-042
Product Number:	IOT-SENS-5000	Engineer:	Alice Sample, PE	Build Quantity:	1000 units
Revision:	Rev 2.1	Status:	Production	Unit Weight:	125g

ASSEMBLY STRUCTURE & COMPONENTS

Level	Item	Part Number	Ref Des	Description	Qty	UOM	Manufacturer	MPN	Lead Time
1	001	IOT-SENS-5000	-	IoT Sensor Module Assembly	1	EA	Sample Electronics	-	-
1	010	PCBA-5000-REV2	-	Main PCB Assembly	1	EA	Example PCB Co.	PCB-CUSTOM-5000	3 wks
2	011	IC-MCU-001	U1	Microcontroller, ARM Cortex-M4, 32-bit, 180MHz	1	EA	Test Semiconductor	TSC-ARM-M4-180	8 wks
2	012	IC-SENSOR-001	U2	Temperature/Humidity Sensor, I2C Interface	1	EA	Demo Sensors Inc.	DSI-TH-3000	6 wks
2	013	IC-WIRELESS-001	U3	WiFi/BLE Module, 2.4GHz, PCB Antenna	1	EA	Sample Wireless Ltd.	SWL-WB-2400	10 wks
2	014	IC-POWER-001	U4	Power Management IC, Buck/Boost, 3.3V Output	1	EA	Example Power Corp.	EPC-PM-3V3	4 wks
2	015	CAP-CERAMIC-100UF	C1-C8	Capacitor, Ceramic, 100uF, 16V, X7R, 0805	8	EA	Test Components	TC-C-100U-16V	2 wks
2	016	CAP-CERAMIC-10UF	C9-C16	Capacitor, Ceramic, 10uF, 25V, X5R, 0603	8	EA	Test Components	TC-C-10U-25V	2 wks
2	017	RES-10K-1PCT	R1-R12	Resistor, Thick Film, 10kΩ, 1%, 0.125W, 0805	12	EA	Example Resistors	ER-10K-1-125	1 wk
2	018	LED-STATUS-RED	D1,D2	LED, Red, 630nm, 20mA, 2.1V, 0603	2	EA	Sample LED Corp.	SLC-RED-630	3 wks
2	019	CONN-USB-C	J1	Connector, USB Type-C, Receptacle, SMT	1	EA	Demo Connectors	DC-USBC-REC	5 wks
2	020	CONN-HEADER-10P	J2	Header, Male, 10-pin, 2.54mm pitch, Through-Hole	1	EA	Example Headers Inc.	EH1-M10-254	2 wks
1	020	ENCL-PLASTIC-001	-	Enclosure, ABS Plastic, IP65, 100x80x30mm	1	EA	Sample Plastics LLC	SP-ABS-IP65-100	6 wks
2	021	SCREW-M3-10MM	-	Screw, M3x10mm, Phillips, Stainless Steel	4	EA	Test Fasteners	TF-M3-10-SS	1 wk
2	022	GASKET-FOAM-001	-	Gasket, Foam, Adhesive, 95x75mm	1	EA	Example Seals Co.	ESC-FOAM-9575	2 wks
1	030	LABEL-PRODUCT	-	Product Label, Polyester, 50x30mm, Barcode	1	EA	Demo Labels Inc.	DLI-POLY-5030	1 wk

Level	Item	Part Number	Ref Des	Description	Qty	UOM	Manufacturer	MPN	Lead Time
1	031	DOC-QUICKSTART	-	Quick Start Guide, Color Print, 4-page	1	EA	Sample Print Shop	SPS-QS-4PG	1 wk
1	032	PKG-BOX-001	-	Packaging Box, Cardboard, 150x120x50mm	1	EA	Example Packaging	EP-BOX-150	2 wks

COST SUMMARY (Per Unit - 1000 Unit Build)

Category	Unit Cost	Extended Cost
Electronic Components	\$32.50	\$32,500.00
PCB Fabrication & Assembly	\$18.75	\$18,750.00
Mechanical Components	\$8.25	\$8,250.00
Documentation & Packaging	\$2.50	\$2,500.00
Manufacturing Labor	\$6.00	\$6,000.00
Testing & Quality Control	\$3.50	\$3,500.00
Total Material Cost	\$71.50	\$71,500.00

Manufacturing Notes:

- All electronic components must be RoHS compliant
- PCB must be conformal coated for moisture protection
- Wireless module requires FCC/CE certification - verify compliance
- Enclosure must pass IP65 ingress protection testing
- Final assembly requires firmware version 2.1.3 or later
- Each unit must undergo functional test before packaging

Alternate Sources:

- U2 (Temp/Humidity Sensor): Alternate MPN: Example Sensors Co. / ESC-TH-2500
- U4 (Power Management): Alternate MPN: Test Power Inc. / TPI-PM-3.3
- All passive components have multiple approved sources - see approved vendor list

REVISION HISTORY

Revision	Date	Engineer	Description
1.0	2024-06-15	John Smith	Initial release
2.0	2024-11-20	Alice Sample	Updated wireless module, added USB-C
2.1	2025-01-15	Alice Sample	Cost reduction: alternate MCU, optimized PCB

NOTICE: This is an example Hardware Bill of Materials created for demonstration purposes only. All part numbers, manufacturers, costs, and technical specifications are fictional and do not represent any real products, suppliers, or transactions. All company names and person names are obviously fictional.

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Bob Example

Engineering Manager

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