

KEYSIGHT TECHNOLOGIES (AGILENT HP)

N6785A

The Keysight N6785A is an 80 W Source/Measure Unit (SMU) designed specifically for battery drain analysis in mobile and IoT devices. Operating as a double-wide module within the N6700 modular power system mainframes, this 2-quadrant SMU provides advanced emulation and high-speed, seamless measurement capabilities to accurately profile battery usage.

SPECIFICATIONS

General

Interfaces	Via N6700 series mainframe backplane (mainframe provides USB, LAN/LXI, and GPIB interfaces)
Display	None (utilizes the mainframe display or software control)
Product Type	Source/Measure Unit (SMU) Module

Physical

Power Supply	Supplied by the N6700 series mainframe backplane
Operating Temperature	0 to 55 °C °C
Dimensions (W×H×D)	70.4 mm x 47.3 mm x 343.4 mm mm
Weight	1.23 kg kg

Output Ratings

Number of Channels	1
Output Quadrants	2-quadrant (source and sink)
Maximum Output Power	80 W
Voltage Range 1	0 to 20 V
Current Range 1 (at 20 V)	0 to ±4 A
Voltage Range 2	0 to 6 V
Current Range 2 (at 6 V)	0 to ±8 A

Measurement Specifications

Measurement Resolution	18-bit
Digitizing Rate	200 kHz (5 µs interval)
Current Measurement Ranges	8 A, 100 mA, 1 mA, 10 µA
Voltage Measurement Ranges	20 V, 2 V, 200 mV
Seamless Current Autoranging	Yes (allows glitchless measurement across all ranges)
Auxiliary DVM	Yes (for independent voltage measurements)
Auxiliary DVM Voltage Range	-20 V to +20 V

Special Features

Programmable Output Resistance	Yes (emulates battery internal resistance)
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Physical & System Compatibility

Mainframe Slots Occupied	2 slots (double-wide module)
Compatible Mainframes	Keysight N6700C, N6701C, N6702C, N6705C (and legacy A/B models)

Environmental Specifications

Storage Temperature Range	-30 to 70 °C
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Programming Accuracy

Voltage Programming Accuracy (20 V Range)	0.025% + 1.8 mV
Voltage Programming Accuracy (6 V Range)	0.025% + 600 μ V
Current Programming Accuracy (8 A & 4 A Ranges)	0.04% + 1.5 mA

Measurement Accuracy

Voltage Measurement Accuracy (20 V Range)	0.025% + 1.2 mV
Voltage Measurement Accuracy (6 V Range)	0.025% + 350 μ V
Current Measurement Accuracy (8 A Range)	0.04% + 1.2 mA
Current Measurement Accuracy (100 mA Range)	0.025% + 10 μ A

Output Noise

Output Voltage Ripple and Noise (RMS)	1.5 mV (20 Hz to 20 MHz)
Output Voltage Ripple and Noise (Peak-to-Peak)	15 mV (20 Hz to 20 MHz)
Output Current Ripple and Noise (RMS)	2 mA (20 Hz to 20 MHz)

Programming Resolution

Voltage Programming Resolution (20 V Range)	300 μ V
Voltage Programming Resolution (6 V Range)	100 μ V

Transient Response

Voltage Transient Recovery Time	< 35 μ s (for a 1.5 A/ μ s load change)
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Auxiliary DVM

Auxiliary DVM Input Resistance	> 10 GOhm
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Outputs

Maximum DC Floating Voltage	240 VDC
Remote Sensing	4-wire connection supported
Maximum Sense Lead Drop	1 V per lead

Protection

Overvoltage Protection	Programmable
Overcurrent Protection	Programmable

TECHNOLOGY

Source Measure Unit (SMU)

APPLICATIONS

Battery Drain Analysis, Mobile Device Testing, IoT Device Testing

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.