

**Aumictech**

Test &amp; measurement · bought, sold, repaired, calibrated

**Data Sheet**

August 14, 2026

AGILENT / KEYSIGHT

# Agilent / Keysight 8657D Pi/4 DQPSK Signal Generator for NADC & PDC

HP Agilent Keysight 8657D Pi/4 DQPSK Signal Generator 100 kHz to 1030 MHz The HP/Agilent 8657D adds pi/4 DQPSK digital modulation to conventional AM, FM, and pulse formats for North American Digital Cellular (NADC) and Japanese Digital Cellular (JDC) radio tests. OEM descriptions place analog coverage at 100 kHz to 1030 MHz and digital modulation on 10 to 129.9 MHz, 810 to 965 MHz, and 1420 to 1540 MHz, building on 8657-series analog performance. NADC and JDC digital cellular receiver tests, mixed analog AM/FM production, and pi/4 DQPSK stimulus on the specified cellular bands. The HP/Agilent 8657D adds pi/4 DQPSK digital modulation to conventional AM, FM, and pulse formats for North American Digital Cellular (NADC) and Japanese Digital Cellular (JDC) radio tests. OEM descriptions place analog coverage at 100 kHz to 1030 MHz and digital modulation on 10 to 129.9 MHz, 810 to 965 MHz, and 1420 to 1540 MHz, building on 8657-series analog performance. NADC and JDC digital cellular receiver tests, mixed analog AM/FM production, and pi/4 DQPSK stimulus on the specified cellular bands.



MODEL

**Agilent / Keysight  
8657D**

CALIBRATION

**Available on  
request**

CONDITION

**Used**

STATUS

**In stock**

RFQ / SKU

**8657D**

LISTING

<https://aumictechlabs.com/products/8657d-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

**This unit**

The Agilent/Keysight 8657D is a specialized Pi/4 DQPSK signal generator engineered for NADC and PDC wireless system validation. It extends the 8657 series with digital modulation capability essential for testing North American Digital Cellular and Japanese Personal Digital Cellular mobile devices across R&D, manufacturing, and field support environments.

**Technical Specifications**

**Frequency Performance** Frequency range: 100 kHz to 1.03 GHz (analog) Frequency resolution: 1 Hz Underrange capability: 10 kHz with uncalibrated output and modulation Switching speed: +16 dBm at most frequencies Absolute level accuracy:  $\pm 1.5$  dB ( $> +7$  dBm);  $\pm 1.0$  dB ( $+7$  dBm to  $-127$  dBm);  $\pm 1.5$  dB ( $\leftarrow -127$  dBm) Level flatness:  $\pm 0.5$  dB (100 kHz to 2.06 GHz at 0 dBm setting) Reverse power protection: 50 W Output impedance: 50  $\Omega$  nominal

**Modulation Specifications**

Standard modulation: AM, FM, Pulse Modulation Pi/4 DQPSK for NADC/PDC digital applications Error Vector Magnitude (EVM):  $< 3.2\%$  DC-coupled FM: Eliminates droop on low-rate tones or digital data Pulse modulation (8657B): Rise/fall times 70 dB on/off ratios Spectral Purity Low residual FM:  $< 4$  Hz at frequencies  $< 1040$  MHz (8657B) Low single-sideband phase noise for adjacent channel selectivity testing Low RF leakage minimizes measurement interference

**Key Features** Calibrated output from 100 kHz to 1.03 GHz with 1 Hz resolution Standing Wave Ratio  $< 1.5$  (levels  $\leq -6.5$  dBm);  $< 2.0$  (levels  $\leq +13$  dBm) on 8657B Pi/4 DQPSK capability optimized for NADC and PDC standards Exceptional frequency stability with minimal retuning drift

**Typical Applications** NADC and PDC mobile device receiver/transmitter validation Manufacturing test for digital cellular handsets Field support and troubleshooting of wireless systems Adjacent channel selectivity and modulation accuracy testing

**Compatibility & Integration** The 8657D builds on the proven 8657 platform, providing backward compatibility while adding specialized digital modulation for cellular standards.

## Features & description

---

From manufacturer datasheet

### Built-in $\pi/4$ DQPSK for NADC and JDC

Digital bands at IF, 800 MHz cellular, and 1.5 GHz JDC Analog AM/FM/pulse inherited from the 8657 family Optional high-stability timebase Option 001 Store/recall and GPIB automation class of the 8657 series Technical Specifications Instrument Type: Synthesized RF signal generator with digital modulation Series Family: HP Agilent 8656/8657A/8657B/8657D Frequency Range Analog: 100 kHz to 1030 MHz Digital Modulation Bands: 10 to 129.9 MHz, 810 to 965 MHz, and 1420 to 1540 MHz Digital Modulation Format:  $\pi/4$  DQPSK Intended Digital Systems: NADC and JDC Frequency Underrange Analog: to 10 kHz uncalibrated class of the 8657 family Frequency Resolution Analog: 10 Hz class (8657A column) Output Level Range Analog: plus 13 dBm to minus 143.5 dBm into 50 ohm (8657 family) Level Resolution: 0.1 dB Absolute Level Accuracy Midband: less than plus or minus 1.0 dB from plus 7 to minus 127 dBm (8657A analog column) Reverse Power Protection: 50 watts from a 50 ohm source Output Impedance: 50 ohm nominal Harmonics Analog: less than minus 30 dBc at output less than or equal to plus 7 dBm (8657A column) Subharmonics 0.1 to 1.03 GHz: none (8657A/B analog column) SSB Phase Noise 520 MHz to 1.04 GHz: less than minus 124 dBc/Hz at 20 kHz offset (8657A column)

## 8657D Characteristics / Specifications

| PARAMETER                               | VALUE                                                                                  |
|-----------------------------------------|----------------------------------------------------------------------------------------|
| Instrument Type                         | Synthesized RF signal generator with digital modulation                                |
| Series Family                           | HP Agilent 8656/8657A/8657B/8657D                                                      |
| Frequency Range Analog                  | 100 kHz to 1030 MHz                                                                    |
| Digital Modulation Bands                | 10 to 129.9 MHz, 810 to 965 MHz, and 1420 to 1540 MHz                                  |
| Digital Modulation Format               | pi/4 DQPSK                                                                             |
| Intended Digital Systems                | NADC and JDC                                                                           |
| Frequency Underrange Analog             | to 10 kHz uncalibrated class of the 8657 family                                        |
| Frequency Resolution Analog             | 10 Hz class (8657A column)                                                             |
| Output Level Range Analog               | plus 13 dBm to minus 143.5 dBm into 50 ohm (8657 family)                               |
| Level Resolution                        | 0.1 dB                                                                                 |
| Absolute Level Accuracy Midband         | less than plus or minus 1.0 dB from plus 7 to minus 127 dBm (8657A analog column)      |
| Reverse Power Protection                | 50 watts from a 50 ohm source                                                          |
| Output Impedance                        | 50 ohm nominal                                                                         |
| Harmonics Analog                        | less than minus 30 dBc at output less than or equal to plus 7 dBm (8657A column)       |
| Subharmonics 0.1 to 1.03 GHz            | none (8657A/B analog column)                                                           |
| SSB Phase Noise 520 MHz to 1.04 GHz     | less than minus 124 dBc/Hz at 20 kHz offset (8657A column)                             |
| Residual AM                             | less than 0.04 percent AM in 50 Hz to 15 kHz BW                                        |
| AM Depth Analog                         | 0 to 99 percent at level less than or equal to plus 7 dBm, carrier at or above 400 kHz |
| AM Resolution                           | 1 percent                                                                              |
| FM DC Mode Max Deviation 0.1 to 130 MHz | 99 kHz (8657A analog column)                                                           |
| Internal Modulation Tones               | 400 Hz and 1 kHz plus or minus 2 percent                                               |
| Analog Modulation Types                 | AM, FM, and pulse                                                                      |
| Save Recall Registers                   | 100 nonvolatile class of the 8657 series                                               |

| PARAMETER                     | VALUE                                                    |
|-------------------------------|----------------------------------------------------------|
| Remote Interface              | GPIB                                                     |
| Operating Temperature         | 0 to 55 C                                                |
| Power Requirements            | 100/120/220/240 V, 48 to 440 Hz class of the 8657 series |
| Form Factor                   | 133 mmHby 425 mmWby 574 mmDclass                         |
| Brand Lineage                 | HP / Agilent                                             |
| Leakage Class                 | less than 1.0 uV two-turn loop family spec               |
| Timebase Standard Aging Class | plus or minus 2 ppm per year typical                     |

# General Specifications & Supplementary Characteristics

| PARAMETER                     | VALUE                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating temperature         | 0 to 55 C                                                                                                                                                                                                                                                                                                                                                                        |
| Operating Temperature         | 0 to 55 C                                                                                                                                                                                                                                                                                                                                                                        |
| Power Requirements            | 100/120/220/240 V, 48 to 440 Hz class of the 8657 series                                                                                                                                                                                                                                                                                                                         |
| Form Factor                   | 133 mmHby 425 mmWby 574 mmDclass                                                                                                                                                                                                                                                                                                                                                 |
| Brand Lineage                 | HP / Agilent                                                                                                                                                                                                                                                                                                                                                                     |
| Leakage Class                 | less than 1.0 uV two-turn loop family spec                                                                                                                                                                                                                                                                                                                                       |
| Timebase Standard Aging Class | plus or minus 2 ppm per year typical Notes Digital-band and pi/4 DQPSK rows are from HP/Agilent 8657D product descriptions. Analog numeric rows reuse the OEM 8657A column on the 8657A/B technical specifications sheet because 8657D analog coverage is 100 kHz to 1030 MHz. Finer DQPSK EVM and filter tables belong on the 8657D digital data sheet/calibration certificate. |

# Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

performance.

Applications

NADC and JDC digital cellular receiver tests, mixed analog AM/FM production, and pi/4 DQPSK stimulus on the specified cellular bands.

Key Features

Built-in pi/4 DQPSK for NADC and JDC

Digital bands at IF, 800 MHz cellular, and 1.5 GHz JDC

Analog AM/FM/pulse inherited from the 8657 family

Optional high-stability timebase Option 001

Store/recall and GPIB automation class of the 8657 series

Technical Specifications

## Technical Specifications

| PARAMETER                       | VALUE                                                                             |
|---------------------------------|-----------------------------------------------------------------------------------|
| Instrument Type                 | Synthesized RF signal generator with digital modulation                           |
| Series Family                   | HP Agilent 8656/8657A/8657B/8657D                                                 |
| Frequency Range Analog          | 100 kHz to 1030 MHz                                                               |
| Digital Modulation Bands        | 10 to 129.9 MHz, 810 to 965 MHz, and 1420 to 1540 MHz                             |
| Digital Modulation Format       | pi/4 DQPSK                                                                        |
| Intended Digital Systems        | NADC and JDC                                                                      |
| Frequency Underrange Analog     | to 10 kHz uncalibrated class of the 8657 family                                   |
| Frequency Resolution Analog     | 10 Hz class (8657A column)                                                        |
| Output Level Range Analog       | plus 13 dBm to minus 143.5 dBm into 50 ohm (8657 family)                          |
| Level Resolution                | 0.1 dB                                                                            |
| Absolute Level Accuracy Midband | less than plus or minus 1.0 dB from plus 7 to minus 127 dBm (8657A analog column) |
| Reverse Power Protection        | 50 watts from a 50 ohm source                                                     |
| Output Impedance                | 50 ohm nominal                                                                    |
| Harmonics Analog                | less than minus 30 dBc at output less than or equal to plus 7 dBm (8657A column)  |
| Subharmonics 0.1 to 1.03 GHz    | none (8657A/B analog column)                                                      |

SSB Phase Noise 520 MHz to 1.04 GHz: less than minus 124 dBc/Hz at 20 kHz offset (8657A column)

## Specifications

| PARAMETER   | VALUE                                           |
|-------------|-------------------------------------------------|
| Residual AM | less than 0.04 percent AM in 50 Hz to 15 kHz BW |

| PARAMETER       | VALUE                                                                                  |
|-----------------|----------------------------------------------------------------------------------------|
| AM Depth Analog | 0 to 99 percent at level less than or equal to plus 7 dBm, carrier at or above 400 kHz |
| AM Resolution   | 1 percent                                                                              |

FM DC Mode Max Deviation 0.1 to 130 MHz: 99 kHz (8657A analog column)

Specifications

| PARAMETER                 | VALUE                                    |
|---------------------------|------------------------------------------|
| Internal Modulation Tones | 400 Hz and 1 kHz plus or minus 2 percent |
| Analog Modulation Types   | AM, FM, and pulse                        |
| Save Recall Registers     | 100 nonvolatile class of the 8657 series |
| Remote Interface          | GPIO                                     |

Option 001: high-stability timebase

Specifications

| PARAMETER                     | VALUE                                                    |
|-------------------------------|----------------------------------------------------------|
| Operating Temperature         | 0 to 55 C                                                |
| Power Requirements            | 100/120/220/240 V, 48 to 440 Hz class of the 8657 series |
| Form Factor                   | 133 mmHby 425 mmWby 574 mmDclass                         |
| Brand Lineage                 | HP / Agilent                                             |
| Leakage Class                 | less than 1.0 uV two-turn loop family spec               |
| Timebase Standard Aging Class | plus or minus 2 ppm per year typical                     |

Notes

Digital-band and pi/4 DQPSK rows are from HP/Agilent 8657D product descriptions. Analog numeric rows reuse the OEM 8657A column on the 8657A/B technical specifications sheet because 8657D analog coverage is 100 kHz to 1030 MHz. Finer DQPSK EVM and filter tables belong on the 8657D digital data sheet/calibration certificate.



## Ordering Information

| OPTION     | DESCRIPTION                                               |
|------------|-----------------------------------------------------------|
| Option 001 | Store/recall and GPIB automation class of the 8657 series |

### Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: [sales@aumictech.com](mailto:sales@aumictech.com) · +1 (484) 841-9341

#### Aumictech

788 S 500 E, Pleasant Grove, UT 84062  
[sales@aumictech.com](mailto:sales@aumictech.com) · +1 (484) 841-9341  
<https://aumictechlabs.com>

NIST-traceable calibration · SAM registered ·  
30-day returns  
NAICS 423690 · 811210 · 541380  
Generated August 14, 2026

Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.