DSAM—DOCSIS® 3.0 New Models
DSAM-2000, DSAM-2300, DSAM-3300, DSAM-6300

Key Features

- **8 downstream x 4 upstream DOCSIS 3.0 testing**
- **Throughput testing of bonded services**
  - **Up to 304 Mbps down, 120 Mbps up (6 MHz carriers)**
  - **Up to 400 Mbps down, 120 Mbps up (8 MHz carriers)**
- **Gigabit Ethernet port standard**
  - **Optional Gig E Throughput testing available**
- **Improved Digital Carrier testing**
  - **Deep interleave video BER**
  - **MER range up to 45 dB**
  - **DQI measurement capability**
- **Integrated Pre-amp**
  - **–45 dBmV ingress scan**
  - **Improved C/N on 20 dB test points**
- **Available with 42, 65, or 85 MHz diplexer to support specific return paths**
- **MoCA compatible**
- **Cable Labs®-compliant certificates**
- **Legacy support for DOCSIS 1.0, 1.1, and 2.0**

Applications

- **Conduct full DOCSIS 3.0 performance testing**
- **Perform 8 downstream by 4 upstream bonded carrier testing**
- **Troubleshoot digital QAM carriers**
- **Find Return Path Ingress**
- **Verify service quality**
- **Home Certification™ reports**
- **Legacy testing of DOCSIS 1.X and 2.0**
- **Non-invasive forward and reverse sweeping**
- **Test digital and analog video**
- **Ethernet Testing of customers service**

The Digital Services Analysis Meter (DSAM) with DOCSIS 3.0 builds on the DSAMs industry leading RF expertise and custom design. The JDSU DSAM DOCSIS 3.0 units on its industry-leading RF expertise and custom design capabilities, the JDSU DOCSIS 3.0 units provide best-in-class 8 downstream by 4 upstream full DOCSIS 3.0 testing coupled with numerous digital and analog testing improvements as well as advances in Ethernet testing capability.

With a fully DOCSIS 3.0 "Gold"-compliant 8 downstream by 4 upstream solution, the DSAM DOCSIS 3.0 units enable service providers to keep pace with service rollout plans. Testing customer equipment performance is simplified with the integrated Gigabit Ethernet (Gig-E) port and Gigabit Ethernet software option.

JDSU has enhanced the digital carrier testing capability with the DOCSIS 3.0-version DSAMs that includes a standard function for testing deep interleave video carriers. Improved measurement sensitivity provides mean error ratio (MER) measurements of 40 dB typical[1], with a display range of up to 45 dB MER. The DOCSIS 3.0 hardware provides the capability to perform Digital Quality Index (DQI™) testing as well. With an internal Multimedia over Coax Alliance (MoCA®) filter, the DSAM with DOCSIS 3.0 is ready to test home networks.

The new DSAM models build upon the powerful features that are already the cornerstone of these units, including non-invasive forward and reverse sweep, Home Certification, PathTrak™ Field view, and more.

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DSAM Detailed Feature Matrix

	Feature	DSAM-2000	DSAM-2300	DSAM-3300	DSAM-6300
Analog and Digital Carrier Level Verification	Analog video and audio power levels	X	X	X	X
	Digital power level	X	X	X	X
	Tilt (1 to 12 channels)	X	X	X	X
	Mini-scan (1 to 12 channels)	X	X	X	X
	Full-scan (1 to 999 channels)	X	X	X	X
	Analog carrier-to-noise	X	X	X	X
	Hum	X	X	X	X
	SmartScan™	Option	Option	X	X
	Spectrum Analyzer with Auto Pre-Amp	Option	Option	X	X
Digital Carrier Quality (QAM Carriers)	MER/EVM measurements	X	X	X	X
	Pre- and post-FEC BER (64, 128, 256)	X	X	X	X
	BER for Deep Interleave (128,4 or 128,5)	X	X	X	X
	Constellation (64, 128, 256)	Option	Option	X	X
	Digital Quality Index™ (DQI)	Option	X	X	X
	AGC Stress	Option	X	X	X
	Errored/severely errored seconds	Option	X	X	X
	QAM Ingress	HW Option	HW Option	HW Option	SW Option
Upstream Physical Verification	Return Loopback (requires QAM Hardware Option)	Option	Option	Option	X
	Local upstream spectrum for ingress check	X	X	X	X
	Return QAM Generator	Option	Option	X	X
	Spectrum Analyzer w/Auto Pre-Amp	Option	Option	X	X
	Field View of the PathTrak Return Spectrum (requires QAM Hardware Option)	Option	Option	Option	Option
DOCSIS®/ EuroDocsis™ Testing	DOCSIS 2.0/1.1/1.0 testing 1 Downstream x 1 Upstream	X	X	X	X
	DOCSIS 3.0 Bonded Carrier testing 8 Downstream x 4 Upstream	SW Option	SW Option	SW Option	SW Option
	Downstream MER/EVM, Pre- and Post-FEC BER	X	X	X	X
	Dynamic DOCSIS Range and Registration	X	X	X	X
	Cable modem configuration file verification	X	X	X	X
	Upstream channel selection	X	X	X	X
	Upstream transmit level and headroom	X	X	X	X
	Cable modem and CPE MAC cloning	X	X	X	X
	CableLabs® issued certificates	X	X	X	X
DOCSIS/ EuroDocsis Service Tests	Packet Loss	Option	X	X	X
	Throughput - Upstream and Downstream (Up to DOCSIS 3.0 rates)	Option	X	X	X
	Ping	Option	X	X	X
	VoIPCheck - Voice over IP testing (MOS, Packet Loss, Jitter, Delay)	Option	Option	Option	Option
Basic Ethernet Testing	Throughput - (DOCSIS 2.0 rates)	Option	Option	X	X
	Packet Loss	Option	Option	X	X
	Ping	Option	Option	X	X
	View CM diagnostics page	X	X	X	X
Gigabit Ethernet Testing	Throughput - (DOCSIS 3.0 rates)	Option	Option	Option	Option
	Packet Loss	Option	Option	Option	Option
	Ping	Option	Option	Option	Option
	Gig-E testing - DOCSIS 3.0 Support up to 400 Mb/s down	Option	Option	Option	Option
RF Network Verification	Forward Sweepless Sweep™	Option	Option	Option	X
	Reverse Alignment				X
	Forward (Downstream) Sweep				Option
	Reverse (Upstream) Sweep				Option
	Return Loopback (requires QAM Hardware Option)	Option	Option	Option	X
HFC Network Verification	Scheduled Autotest	X	X	X	X
	Proof Test	X	X	X	X
Home Network Verification	IP Tests via 10/100/1000 Ethernet jack	Option	Option	X	X
	Ingress Resistance Test (IRT)	X	X	X	X
	Fault Location using FDR feature in LST-1700 remote transmitter	X	X	X	X
	Test Point Compensation	X	X	X	X
Autotest	Home Certification	Option	Option	Option	Option
	Video Autotest	X	X	X	X
	Cable Modem Autotest	X	X	X	X
	Combination Autotest (Video and Cable Modem)	X	X	X	X
	Proof of Performance (Scheduled autotest)	X	X	X	X
	Web Browser	Option	Option	Option	Option
Miscellaneous	RF or Ethernet synchronization with TPP	X	X	X	X
	Secure Sync™ - RF Synchronization through firewalls	X	X	X	X

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Specifications

Analog Level Measurement

Signal types CW, video, and audio (NTSC, PAL, and SECAM)

Frequency range 4 to 1,000 MHz

Accuracy ±10 ppm at 25°C (77°F) 10 kHz tuning resolution

Tuning range[2]—40 to +60 dBmV (typical)

Resolution 0.1 dB

Resolution bandwidth 280 kHz

Accuracy[3] ±1.5 dB typical at 25°C (77°F)

Carrier-to-Noise

30 to 45 dB ±2 dB

45 to 48 dB ±3 dB

Input at >0 dBmV (up to 750 MHz)

Input at >6 dBmV (750–1000 MHz)

Hum

Accuracy: Up to 5% hum: ±0.8%

From 5 to 10%: ±1.0%

Digital Level Measurement

Modulation Types: QPSK, QAM (DVB/ACTS)

Range[1] −40 to +50 dBmV (typical)

Resolution 0.1 dB

Accuracy[2] ±2.0 dB typical at 25°C (77°F)

Downstream QAM Demodulation

Modulation type 64, 128[3], and 256 QAM, ITU-T J.83 Annex A, B, or C (selectable)

Input range (lock range)[4]−15 to +50 dBmV total integrated power from:

57–1000 MHz (42 MHz Diplexer 6 MHz Channel spacing)

83–1000 MHz (65 MHz Diplexer 6 MHz Channel spacing)

108–1000 MHz (85 MHz Diplexer 6 MHz Channel spacing)

58–1000 MHz (42 MHz Diplexer 8 MHz Channel spacing)

84–1000 MHz (65 MHz Diplexer 8 MHz Channel spacing)

109–1000 MHz (85 MHz Diplexer 8 MHz Channel spacing)

50 kHz tuning resolution

BER (bit error rate)5pre and post FEC: 10^{-4} to 10^{-9}

MER (modulation error ratio)[1]

Range 64 QAM: 21 to 45 dB[8]

Accuracy: ± 2 dB (Up to 40 dB typical)[1]

Range 128 QAM: 25 to 45 dB[4]

Accuracy: ±2 dB (Up to 40 dB typical)[1]

Range 256 QAM: 28 to 45 dB[4]

Accuracy: ± 2 dB (Up to 40 dB typical)[1]

Symbol rate

Annex A, 5.057 to 6.952 MSPS for 64, 128, and 256 QAM

Annex B, 5.057 MSPS for 64 QAM and 5.361 MSPS for 256 QAM

Annex C, 5.274 MSPS for 64 QAM, and 5.361 MSPS for 256 QAM

DOCSIS Testing

Support for operating in DOCSIS 1.0, 1.1, 2.0, or 3.0 modes

Compliant with CableLabs® Specifications for DOCSIS 1.0, 1.1, 2.0, and 3.0

CableLabs-compliant BPI+ root-chained certificates pre-installed

EuroCableLabs® certificates available

Downstream Testing

Support for channel bonding of 8 downstream carriers

Throughput testing up to 304 Mbps (6 MHz Carriers) and 400 Mbps (8 MHz Carriers)[5]

Upstream Testing

Support for channel bonding of 4 upstream carriers

Throughput testing up to 120 Mbps[5]

Upstream transmit range and Diplexer crossover (DOCSIS modes only)

5 to 42 MHz 42/88 MHz (min. downstream DOCSIS center freq. 91 MHz)

5 to 65 MHz 65/96 MHz (min. downstream DOCSIS center freq. 100 MHz) 5 to 85 MHz 85/111 MHz (min. downstream DOCSIS center freq. 111 MHz)

Upstream modulation QPSK, 16 QAM, 32 QAM, and 64 QAM as instructed by CMTS transmitter output at 25°C (77°F) maximum, +52 dBmV with 64 QAM, +55 dBmV with 16 QAM, and +58 dBmV with QPSK (typical for a single transmit channel)

Upstream Spectrum (Ingress Scan)

Spans 4 to 42 MHz, 4 to 65 MHz, 4 to 85 MHz

Sweep rate <2 s

Display scaling and range 1, 2, 5, and 10 dB/division; 6 vertical divisions

Resolution bandwidth 280 kHz

Sensitivity[2] −45 to +60 dBmV (typical)

Downstream Spectrum (forward scan) (optional)

Frequency range 4 to 1000 MHz

Sweep rate <2.5 s (display)

Display scaling and range 1, 2, 5 and 10 dB/division; 6 vertical divisions

Resolution bandwidth 30 or 280 kHz

Span 10 or 50 MHz

Sensitivity −35 to 60 dBmV (typical)

Low-pass filter (matches Diplexer frequency)

Reverse path sensitivity (with low-pass filter on) −45 to +60 dBmV (typical)

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Specifications

Constellation (optional)

Modulation type 64, 128, and 256 QAM

Constellation points 2000, 4000, 8000, 16000, 32000, or 640000

Return QAM Generator

Signal modulations 16 QAM, 64 QAM

Symbol rates (MSPS) 1.28, 2.56, 5.12

Frequency Range 5–42 MHz, 5–65 MHz, 5–85 MHz

Supported Levels 8.0–58.0 dBmV

DSAM Sweep Specifications (optional)

Forward Sweep

Requires SDA-5500 (SDA-compatible mode)

Reverse Sweep and Reverse Alignment

Requires SDA-5500 (Single reverse) or SDA-5510 (Multiple reverse) (SDA-compatible mode)

Sweep Modes

Frequency range

5–1000 MHz Forward

5–65 MHz Reverse

Display span user definable

Display scale/range 6 vertical divisions 1, 2, 5, or 10 dB/division

Sweep pulse occupied bandwidth 30 kHz

Stability ±0.5 dB, normalized (dependent on stability of referenced carriers)

Sweep rate ~1 s (78 channels, including scrambled and digital signal types)

Return Loopback

Frequency range 5–55 MHz

   5–65 MHz (Units with QAM HW OPT-A)

Transmit level 8–58 dBmV

Standards Compliance

Shock and vibration 5 Gs at 2 Hz to 5 kHz

Transportation packaging I.S.T.A.—Procedures 1C and 1G

Drop IEC 61010

Handle stress IEC 61010

Water resistance MIL-STD-810F

Safety emissions EN 55022, CE, FCC

Safety immunity EN 61000, CE, FCC

General

Display 320 x 240 pixels, TFT color display

Second Language Options

Chinese, French, German, Hungarian, Japanese, Korean, Portuguese, Polish, or Spanish

Dimensions with battery (without QAM HW option) (W x H x D)	12 x 25 x 10.8 cm (4.75 x 9.75 x 4.25 in)
Dimensions with battery (with QAM HW option) (W x H x D)	12 x 25 x 12.1 cm (4.75 x 9.75 x 4.75 in)
Weight without battery (without QAM HW option)	1.2 kg (2 lb, 10 oz)
Weight without battery (with QAM HW option)	1.4 kg (3 lb, 0 oz)
Battery weight	0.6 kg (1 lb, 6 oz)
Storage and operating temperature range	−20 to +50°C (−4 to +122°F)

Footnotes:

1. MER Typical defined as identical QAM carriers at +5 dBmV with no adjacent analog carrier.
2. Total integrated power, detectable range.
3. Accuracy for analog levels between −20 to +55 dBmV. Accuracy for digital levels between −20 to +50 dBmV. Additional uncertainty of ±1.0 dB from 4 to 15 MHz. Additional uncertainty of ±0.5 dB across −20 to +50°C.
4. MER Range declines as input levels decrease. Expected MER Range at MIN LOCK Level of −15 dBmV is >30 dB MER.
5 Stated throughput is the max theoretical capability. Actual performance may vary.

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Ordering Information

Models

Note: The diplexer is used to block downstream carriers when performing measurements on the return path. JDSU recommends ordering the version that matches the system's existing return path.

DSAM Mainframes

Part Number	Description	Notes/Ordering Information
DSAM-2000	Install/Fulfillment technician DOCSIS and Signal Level Meter	DOCSIS 3.0 hardware ready; must order DSAM-D3-SWOPT to enable 3.0 mode and bonded carrier testing
DSAM-2300	Service technician DOCSIS and Signal Level Meter	DOCSIS 3.0 hardware ready; must order DSAM-D3-SWOPT to enable 3.0 mode and bonded carrier testing
DSAM-3300	Maintenance/Service technician DOCSIS Signal Level Meter	DOCSIS 3.0 hardware ready; must order DSAM-D3-SWOPT to enable 3.0 mode and bonded carrier testing
DSAM-6300	Sweep technician DOCSIS, Sweep and Signal Level Meter	DOCSIS 3.0 hardware ready; must order DSAM-D3-SWOPT to enable 3.0 mode and bonded carrier testing

DOCSIS 3.0 & Return Path Diplexer (Choose only one—mutually exclusive)

DSAM-D3DIPLEX-42	42 MHz DOCSIS 3.0 Diplexer	Must choose one diplex frequency to match return path
DSAM-D3DIPLEX-65	65 MHz DOCSIS 3.0 Diplexer	Must choose one diplex frequency to match return path
DSAM-D3DIPLEX-85	85 MHz DOCSIS 3.0 Diplexer	Must choose one diplex frequency to match return path

Mainframe Option—QAM HW Option—provides additional hardware required to allow QAM Ingress Option and Return Loopback Option

DSAM-QAMHWOPT-A	QAM Option HW & Loopback HW – 8 MHz	Optional HW that provides QAM Ingress and Return Loopback capability. Must order SW options to enable these HW options.
DSAM-QAMHWOPT-B	QAM Option HW & Loopback HW – 6 MHz	Optional HW that provides QAM Ingress and Return Loopback capability. Must order SW options to enable these HW options.

Options

DSAM-D3-SWOPT	DOCSIS 3.0 bonded testing	Available on all 2000, 2300, 3300, 6300 DSAM models; meters ordered without this option will operate only as DOCSIS 2.0
DSAM-DPERFOPT	DOCSIS Performance Option—Provides Registration, Throughput, Packet Loss, and Ping through DOCSIS RF connection	Available on DSAM-2000; included on 2300, 3300, 6300
DSAM-EDIGOPT	Enhanced Digital Set (DQI, ES/SES, AGC Stress)	Available on DSAM-2000; included on 2300, 3300, 6300
DSAM-BASICETHOPT	Basic Ethernet Option (10/100T) up to DOCSIS 2.0 speeds	Available on DSAM-2000 and 2300; included on 3300, 6300
DSAM-D3GIGE-OPT	Gigabit Ethernet Option (10/100/1000T)—Enables Gig-E port with Throughput beyond DOCSIS 3.0 speeds	Optional on all D3 DSAMs; must also purchase basic Ethernet on DSAM 2000 and 2300 before adding DSAM-D3GIGE-OPT
1019-00-1491	Integrated Web Browser	Available on all meters
1019-00-1556	VoIP Check	Available on all meters
1019-00-1495	Field View w/ return signal generator	Available on all meters
1019-00-1499	Field View w/o return signal generator	Available on all meters
DSAM-SA-OPT	Downstream Spectrum Analyzer	Available on DSAM-2000 and 2300; included on 3300 and 6300
DSAM-CONST-OPT	Constellation	Available on DSAM-2000 and 2300; included on 3300 and 6300
1019-00-1516	Downstream Spectrum Analyzer and Constellation package	Available on DSAM-2000 and 2300; included on 3300 and 6300
DSAM-SMARTSCANOPT	SmartScan™—Channel Deviation and Tilt detection	Available on DSAM-2000 and 2300; included on 3300 and 6300
1019-00-1513	Home Certification	Available on all meters
1019-00-1599	Return QAM Generator (QPSK, QAM16, QAM64)	Available on DSAM-2000 and 2300; included on 3300 and 6300
DSAM-QING-OPT	QAM Ingress Software Option	Must order QAM HW option to order this; QAM HW option is included on 6300
DSAM-QINGLOOP-OPT	QAM Ingress and Return Loopback package	Must order QAM HW option to order this; QAM HW option is included on 6300
DSAM-RETALIGN-OPT	Return Alignment (requires QAM Ingress and Loopback Package)	Must also order QAM HW option on DSAM 3300; included on 6300
DSAM-RLOOP-OPT	Return Loopback (Requires QAM Ingress HW)	Must also order QAM HW option on DSAM 3300; included on 6300
1019-00-1567	Forward Sweep	Available on 6300 only
1019-00-1563	Reverse Sweep	Available on 6300 only
1019-00-1641	Sweepless Sweep	Included on 6300; available on all other models
1019-00-1455	Substitute 75-Ohm BNC Connector	

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Ordering Information

Second Language Option

Part Number	Description
DSAM3LANGJP	Second language Japanese
DSAM3LANGPOL	Second Language Polish
DSAM3LANGKOR	Second Language Korean
DSAM3LANGFRA	Second language French
DSAM3LANGSPAN	Second language Spanish
DSAM3LANGCHN	Second Language Chinese
DSAM3LANGGER	Second language German
DSAM3LANGHUN	Second Language Hungarian
DSAM3LANGBRZPORG	Second Language Brazilian Portuguese

Power Cord Options (Choose one)

6011-80-0002	Power Cord—Continental Europe
6011-80-0006	Power Cord—North America
6011-80-0009	Power Cord—United Kingdom
6011-80-0013	Power Cord—Italy
6011-80-0014	Power Cord—Australia
6011-80-0015	Power Cord—Switzerland
6011-80-0019	Power Cord—India/South Africa
6049-01-1000	Power Cord—Japan

Included Accessories

EZ-charge High-capacity Li-ion Battery

Universal Power Supply

Power Cord (Choose one)

One Replaceable Lens

12V DC In-vehicle Adapter

Shoulder Strap

Protective Case

Optional Accessories/Parts

1019-00-1564	Spare/Replacement EZ-charge High-capacity Battery
DSAM_PWR_SUP	Spare/Replacement AC/DC Universal Power Supply
1019-00-1366	Stand Hook w/Nylon Web Straps
1019-00-1426	Set of 5 Snap-in Replaceable Lenses
1019-00-1520	Large Soft Case for Meter and Accessories
1019-00-1603	DSAM 25 Pack of F Connectors

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Ordering Information

Pre-Configured Packages: Add additional software options to any of the following packages:

Packages for North America or 42-MHz Return Path

Part Number	Description	Notes/Ordering Information
DSAM-D2TECH1PKG-42	Fulfillment Tech/Installer Package, DSAM 2000 with DOCSIS 2.0 w/ 42 MHz Diplexer, software upgradeable to DOCSIS 3.0. Includes high-capacity battery (standard) as well as browser and VoIP Check options.	Does not include DOCSIS 3.0 SW option or DSAM-DPERFOPT, which must be ordered separately, or order TECH2 Package.
DSAM-D3TECH1PKG-42	Fulfillment Tech/Installer Package, DSAM 2000 with DOCSIS 3.0 w/ 42 MHz Diplexer. Includes high-capacity battery (standard) as well as browser and VoIP Check options.	Includes DOCSIS 3.0 SW option as well as browser and VoIP Check. Does not include DSAM-DPERFOPT, which must be ordered separately, or order TECH2 Package.
DSAM-D3TECH2PKG-42	Fulfillment Tech Package, DSAM 2300 with DOCSIS 3.0 w/ 42 MHz Diplexer. Includes DQI + SmartScan and high-capacity battery (standard) as well as browser and VoIP Check options.	Includes DOCSIS 3.0 SW option and DQI, ES/SES, and AGC Stress, as well as browser and VoIP Check. Does not include QAM ingress HW or SW, order Tech4 Package if QAM ingress is needed.
DSAM-D3TECH3PKG-42	Service Tech Package, DSAM 3300 with DOCSIS 3.0 w/ 42 MHz Diplexer. Includes DQI, SmartScan, and high-capacity battery (standard) as well as browser and VoIP Check options.	Includes DOCSIS 3.0 SW option and DQI, ES/SES, and AGC Stress, as well as browser and VoIP Check. Does not include QAM ingress HW or SW, order Tech4 Package if QAM ingress is needed.
DSAM-D3TECH4PKG-42	Maintenance Tech Package, DSAM 3300 with DOCSIS 3.0 w/ 42 MHz Diplexer. Includes DQI, SmartScan, and high-capacity battery (standard) as well as DSAM-QAMHWOPT-B, plus QAM Ingress SW, browser and VoIP Check.	Includes DOCSIS 3.0 SW option and QAM-HWOPT-B, QAM Ingress SW, DQI, ES/SES, and AGC Stress, as well as browser, VoIP Check, and SmartScan.
DSAM-D3SWPPKG-42	Sweep Tech Package, DSAM-6300 with DOCSIS 3.0 w/ 42 MHz Diplexer. Includes DQI, SmartScan, Return Loopback, Return Alignment, and Sweepless Sweep (standard). Package includes Forward Sweep, Reverse Sweep, QAM Ingress SW, browser, and VoIP Check.	Includes DOCSIS 3.0 SW option and QAM-HWOPT-B, QAM ingress SW, DQI, ES/SES, and AGC Stress, as well as browser, VoIP Check and SmartScan, and Forward and Reverse Sweep.

Packages for Europe, Asia, or Systems with 65-MHz Return Path

Part Number	Description	Notes/Ordering Information
DSAM-D2TECH1PKG-65	Fulfillment Tech/Installer Package, DSAM 2000 with DOCSIS 2.0 w/ 65 MHz Diplexer; software upgradeable to DOCSIS 3.0. Includes high-capacity battery (standard). Package includes browser and VoIP Check options.	Does not include DOCSIS 3.0 SW option. Includes browser and VoIP Check. Does not include DSAM-DPERFOPT, which must be ordered separately, or order TECH2 Package.
DSAM-D3TECH1PKG-65	Fulfillment Tech/Installer Package, DSAM 2000 with DOCSIS 3.0 w/ 65 MHz Diplexer. Includes high-capacity battery (standard). Package includes browser and VoIP Check options.	Includes DOCSIS 3.0 SW option as well as browser and VoIP Check. Does not include DSAM-DPERFOPT, which must be ordered separately, or order TECH2 Package.
DSAM-D3TECH2PKG-65	Fulfillment Tech Package, DSAM 2300 with DOCSIS 3.0 w/65 MHz Diplexer. Includes DQI + SmartScan and high-capacity battery (standard). Package includes browser and VoIP Check options.	Includes DOCSIS 3.0 SW option as well as DQI, ES/SES, and AGC Stress, as well as browser and VoIP Check. Does not include QAM Option HW or QAM Ingress SW, order Tech4 Package if QAM ingress is needed.
DSAM-D3TECH3PKG-65	Service Tech Package, DSAM 3300 with DOCSIS 3.0 w/ 65 MHz Diplexer. Includes DQI, SmartScan and high-capacity battery (standard). Package includes browser and VoIP Check options.	Includes DOCSIS 3.0 SW option as well as DQI, ES/SES, and AGC Stress, as well as browser and VoIP Check. Does not include QAM Ingress HW or SW, order Tech4 Package if QAM ingress is needed.
DSAM-D3TECH3PKG-65	Maintenance Tech Package, DSAM 3300 with DOCSIS 3.0 w/ 65 MHz Diplexer. Includes DQI, SmartScan and high-capacity battery (standard). Package includes DSAM-QAMHWOPT-A, plus QAM Ingress SW, browser, and VoIP Check.	Includes DOCSIS 3.0 SW option as well as QAM-HWOPT-A and QAM Ingress SW, DQI, ES/SES, and AGC Stress, as well as browser, VoIP Check and SmartScan.
DSAM-D3SWPPKG-65	Sweep Tech Package, DSAM-6300 with DOCSIS 3.0 w/ 65 MHz Diplexer. Includes DQI, SmartScan, Return Loopback, Return Alignment, and Sweepless Sweep (standard). Package includes Forward Sweep, Reverse Sweep, QAM Ingress SW, browser, and VoIP Check.	Includes DOCSIS 3.0 SW option as well as QAM-HWOPT-A and QAM Ingress SW, DQI, ES/SES, and AGC Stress, browser, VoIP Check, SmartScan, Forward Sweep, and Reverse Sweep

JDSU recommends that you work with your sales contact to build the DSAM for your needs. Packages have been created for convenience and savings that simplify the ordering process and bundle mutiple popular features. Additional options are available to add to the pre-configured packages. These packages have factory configured hardware which may not be substituted or modified.