IQS-8805 Power Blazer

DSN/PDH AND SONET/SDH ELECTRICAL TEST MODULE
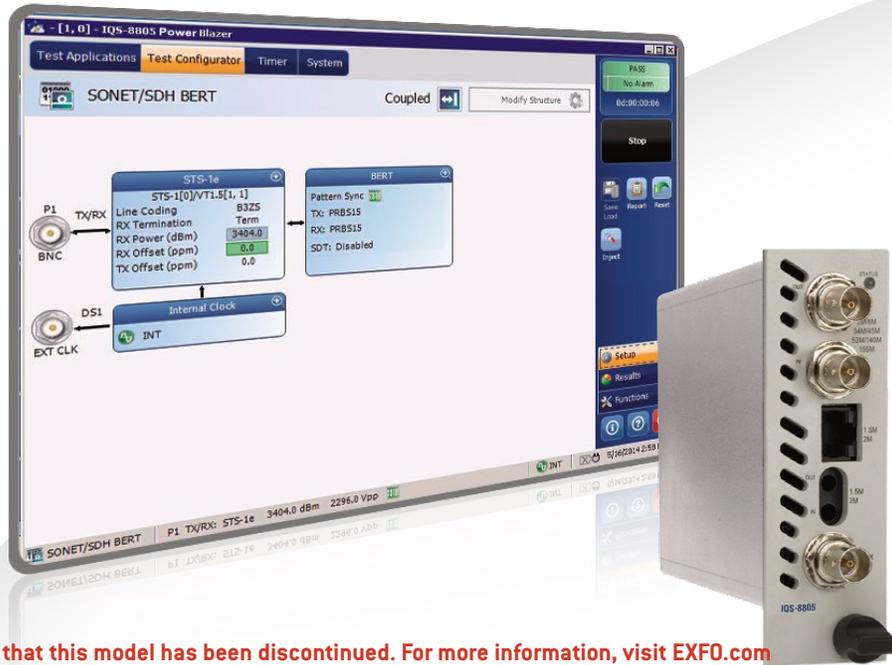
Please note that this model has been discontinued. For more information, visit EXFO.com

Supports DSn, PDH, SONET and SDH electrical rates up to 155 Mbit/s and is ideally suited to manufacturing and R&D environments.

KEY FEATURES

Comprehensive DSn, PDH, SONET and SDH electrical interfaces up to 155 Mbit/s in a single-slot module

DSn/PDH and SONET/SDH BER testing for service turn-up and troubleshooting

Efficiently assesses DSn signals with dual DSn monitoring capability

Centralized support for injection and monitoring of errors and alarms

PLATFORM COMPATIBILITY

Platforms
IQS-605HS and IQS-610HS

TESTING TRADITIONAL TDM SERVICES

Offered on EXFO's IQS-600-HS Platform, the IQS-8805 Power Blazer is ideally suited to TDM service testing and troubleshooting activities. This test module offers the capabilities needed to test traditional TDM DSn and PDH electrical rates, as well as SONET and SDH electrical rates of up to 155 Mbit/s, thereby enabling users to perform tests ranging from simple bit-error-rate (BER) testing to advanced characterization and troubleshooting procedures.

These functions include:

› Bulk payload generation and analysis from 64 kbit/s to 155 Mbit/s

› High-order mappings: STS-1/3c and AU-3/AU-4

› Low-order mappings: VT1.5/2 and VC-11/12/ 3

› Section/RS, line/MS, high-order (HO) and low-order (LO) path overhead manipulation and monitoring

› Section/RS, line/MS, high-order and low-order path alarm/error generation and monitoring

› High-order and low-order pointer generation and monitoring

› Tandem connection monitoring

› Performance monitoring: G.821, G.826, G.828, G.829, M.2100, M.2101

› Frequency analysis and power measurement

› Frequency offset generation

› Automatic protection switching and service disruption time measurements

› Round-trip delay measurements

› Independent transmitter and receiver testing

› Through mode analysis

› Programmable error/alarm injection

› DS1/DS3 auto-detection of line code, framing and test pattern

› Dual DS1/DS3 receiver testing

› DS1 FDL

› DS1 loopcodes and NI/CSU loopback emulation

› Fractional T1/E1 testing

› DS3 FEAC

UNSURPASSED CONFIGURATION AND OPERATIONAL FLEXIBILITY

Simplified BER Testing

The IQS-8805 Power Blazer provides the ability to preconfigure bit-error-rate (BER) thresholds that are user-defined prior to running the test. This allows for a simple pass/fail verdict at the conclusion of the test, leaving no room for misinterpretation of the test results.
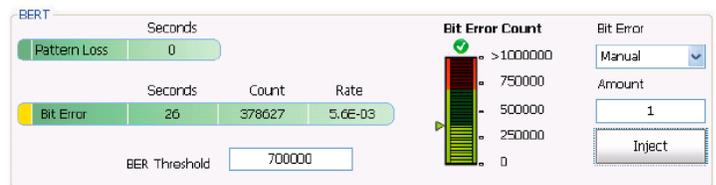

Simplified Error Injection

This IQS-8805 feature enables the user to inject errors with a single click from any screen, making it possible for technicians to ensure circuit continuity prior to starting a test. Furthermore, the error injection functionality can be preprogrammed for any given type of error, rather than just bit errors.


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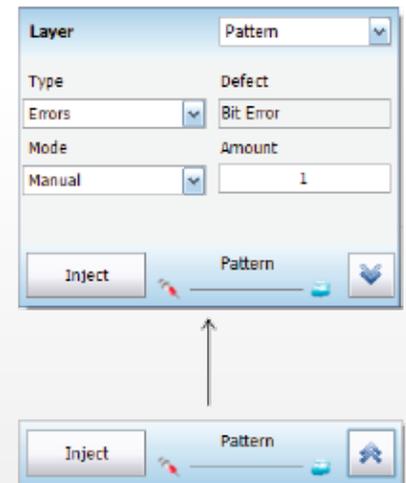
Complete Overhead Monitoring

The IQS-8805 Power Blazer offers access to all SONET/SDH overhead (OH) bytes. Furthermore, the user can select any given OH byte to retrieve additional detailed information about that byte without the need to switch pages.

Remote Management

EXFO Remote Toolbox™ remote management software is supported on all Transport, Packet and Power Blazer modules, and provides the user with a remote connection to the instrument's graphical user interface. This identical view of the GUI is supported on any Windows-based workstation, allowing for simplified remote testing and data analysis, as well as remote monitoring.
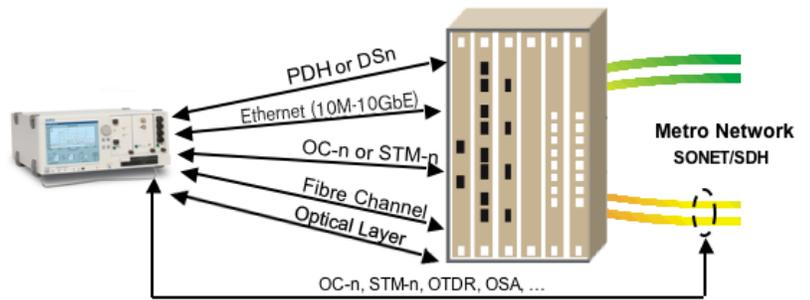
With its modular, multislot design, the IQS-600 platform enables users to configure and upgrade their systems with transport, datacom or optical layer modules according to their testing needs, minimizing capital expenditures.

Automated Test Scripting

The IQS-8805 Power Blazer supports automated test capabilities using industry-based SCPI commands, which can be used as the basis for larger automation routines that can be created in any .NET environment.

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ELECTRICAL INTERFACES

The following section provides detailed information on all supported electrical interfaces.

DSN/PDH AND SONET/SDH ELECTRICAL INTERFACES

Transceiver type	DS1	E1/2M		E3/34M	DS3/45M		STS-1e/STM-0e/52M	E4/140M	STS-3e/STM-1e/155M	
Tx pulse amplitude	2.4 to 3.6 V	3.0 V	2.37 V	1.0 ±0.1 V	0.36 to 0.85 V			1.0 ±0.1 Vpp	0.5 V	
Tx pulse mask	GR-499 Figure 9.5	G.703 Figure 15	G.703 Figure 15	G.703 Figure 17	DS-3 GR-499 Figure 9-8	45M G.703 Figure 14	GR-253 Figure 4-10/4-11	G.703 Figure 18/19	STS-3e GR-253 Figure 4-12, 4-13, 4-14	STM-1e/155M G.703 Figure 22 and 23
Tx LBO preamplification	0-133 ft 133-266 ft 266-399 ft 399-533 ft 533-655 ft				0 to 225 ft 225 to 450 ft		0 to 225 ft 225 to 450 ft		0 to 225 ft	
Cable simulation	−22.5 dB −15.0 dB −7.5 dB 0 dB				450 to 900 (927) ft		450 to 900 (927) ft			
Rx level sensitivity	For 772 kHz: TERM: ≤26 dB (cable loss only) at 0 dBdsx Tx DSX-MON: ≤26 dB (20 dB resistive loss + cable loss ≤ 6 dB) Bridge: ≤6 dB (cable loss only)	For 1024 kHz: TERM: ≤6 dB (cable loss only) MON: ≤26 dB (20 dB resistive loss + cable loss ≤ 6 dB) Bridge: ≤6 dB (cable loss only)	For 1024 kHz: TERM: ≤6 dB (cable loss only) MON: ≤26 dB (20 dB resistive loss + cable loss ≤ 6 dB) Bridge: ≤6 dB (cable loss only)	For 17.184 MHz: TERM: ≤12 dB (coaxial cable loss only) MON: ≤26 dB (20 dB resistive loss + cable loss ≤ 6 dB) Bridge: ≤6 dB (cable loss only)	For 22.368 MHz: TERM: ≤10 dB (cable loss only) DSX-MON: ≤26.5 dB (21.5 dB resistive loss + cable loss ≤ 5 dB)		For 25.92 MHz: TERM: ≤10 dB (cable loss only) MON: ≤26 dB (20 dB resistive loss + cable loss ≤ 5 dB)	For 70 MHz: TERM: ≤12 dB (coaxial cable loss only) MON: ≤26 dB (20 dB resistive loss + cable loss ≤ 6 dB)	For 78 MHz: TERM: ≤12.7 dB (coaxial cable loss only) MON: ≤26 dB (20 dB resistive loss + cable loss ≤ 6 dB)	
Transmit bit rate	1.544 Mbit/s ±4.6 ppm	2.048 Mbit/s ±4.6 ppm	2.048 Mbit/s ±4.6 ppm	34.368 Mbit/s ±4.6 ppm	44.736 Mbit/s ±4.6 ppm		51.84 Mbit/s ±4.6 ppm	139.264 Mbit/s ±4.6 ppm	155.52 Mbit/s ±4.6 ppm	
Frequency offset generation	1.544 Mbit/s ±140 ppm	2.048 Mbit/s ±70 ppm	2.048 Mbit/s ±70 ppm	34.368 Mbit/s ±50 ppm	44.736 Mbit/s ±50 ppm		51.84 Mbit/s ±50 ppm	139.264 Mbit/s ±50 ppm	155.52 Mbit/s ±50 ppm	
Receive bit rate	1.544 Mbit/s ±140 ppm	2.048 Mbit/s ±100 ppm	2.048 Mbit/s ±100 ppm	34.368 Mbit/s ±100 ppm	44.736 Mbit/s ±100 ppm		51.84 Mbit/s ±100 ppm	139.264 Mbit/s ±100 ppm	155.52 Mbit/s ±100 ppm	
Measurement accuracy (uncertainty) Frequency (ppm) Electrical power (dB)	±4.6 ±1.5	±4.6 ±1.5	±4.6 ±1.5	±4.6 ±1.5	±4.6 ±1.5		±4.6 ±1.5	±4.6 ±1.5	±4.6 ±1.5	
Peak-to-peak voltage	±10 % down to 500 mVpp	±10 % down to 500 mVpp	±10 % down to 500 mVpp	±10 % down to 500 mVpp	±10 % down to 200 mVpp		±10 % down to 200 mVpp	±10 % down to 200 mVpp	±10 % down to 200 mVpp	
Intrinsic jitter (Tx)	ANSI T1.403 section 6.3 GR-499 section 7.3	G.823 section 5.1	G.823 section 5.1	G.823 section 5.1 G.751 section 2.3	GR-499 section 7.3 (categories I and II)		GR-253 section 5.6.2.2 (category II)	G.823 section 5.1	G.825 section 5.1 GR-253 section 5.6.2.2	
Input jitter tolerance	AT&T PUB 62411 GR-499 section 7.3	G.823 section 7.1	G.823 section 7.1	G.823 section 7.1	GR-499 section 7.3 (categories I and II)		GR-253 section 5.6.2.2 (category II)	G.823 section 7.1 G.751 section 3.3	G.825 section 5.2 GR-253 section 5.6.2.3	
Line coding	AMI and B8ZS	AMI and HDB3	AMI and HDB3	HDB3	B3ZS		B3ZS	CMI	CMI	
Input impedance (resistive termination)	100 ohms ±5 %, balanced	120 ohms ±5 %, balanced	75 ohms ±5 %, unbalanced	75 ohms ±5 %, unbalanced	75 ohms ±5 %, unbalanced		75 ohms ±5 %, unbalanced	75 ohms ±10 %, unbalanced	75 ohms ±5 %, unbalanced	
Connector type	BANTAM and RJ-48C	BANTAM and RJ-48C	BNC	BNC	BNC		BNC	BNC	BNC	

SYNCHRONIZATION INTERFACES

	External Clock DS1/1.5M	External Clock E1/2M	External Clock E1/2M	Trigger 2 MHz
Tx pulse amplitude	2.4 to 3.6 V	3.0 V	2.37 V	0.75 to 1.5 V
Tx pulse mask	GR-499 Figure 9.5	G.703 Figure 15	G.703 Figure 15	G.703 Figure 20
Tx LBO preamplification	Typical power dBdsx +0.6 dBdsx (0-133 ft) +1.2 dBdsx (133-266 ft) +1.8 dBdsx (266-399 ft) +2.4 dBdsx (399-533 ft) +3.0 dBdsx (533-655 ft)			
Rx level sensitivity	TERM: ≤6 dB (cable loss only) (at 772 kHz for T1) DSX-MON: ≤26 dB (20 dB resistive loss + cable loss ≤ 6 dB) Bridge: ≤6 dB (cable loss only)	TERM: ≤6 dB (cable loss only) MON: ≤26 dB (20 dB resistive loss + cable loss ≤ 6 dB) Bridge: ≤6 dB (cable loss only)	TERM: ≤6 dB (cable loss only) MON: ≤26 dB (resistive loss + cable loss ≤ 6 dB) Bridge: ≤6 dB (cable loss only)	≤6 dB (cable loss only)
Transmission bit rate	1.544 Mbit/s ± 4.6 ppm	2.048 Mbit/s ± 4.6 ppm	2.048 Mbit/s ± 4.6 ppm	
Reception bit rate	1.544 Mbit/s ± 50 ppm	2.048 Mbit/s ± 50 ppm	2.048 Mbit/s ± 50 ppm	
Intrinsic jitter (Tx)	ANSI T1.403 section 6.3 GR-499 section 7.3	G.823 section 6.1	G.823 section 6.1	G.703 table 11
Input jitter tolerance	AT&T PUB 62411 GR-499 section 7.3	G.823 section 7.2 G.813	G.823 section 7.2 G.813	G.823 section 7.1 G.751 section 3.3
Line coding	AMI and B8ZS	AMI and HDB3	AMI and HDB3	
Input impedance (resistive termination)	75 ohms ± 5 %, unbalanced	75 ohms ± 5 %, unbalanced	75 ohms ± 5 %, unbalanced	75 ohms ± 5 %, unbalanced
Connector type	BNC[a]	BNC[a]	BNC	BNC

Note

a. Adaptation cable required for BANTAM.

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FUNCTIONAL SONET AND DSn SPECIFICATIONS		FUNCTIONAL SDH AND PDH SPECIFICATIONS	
Available wavelengths (nm)	1310, 1550	Available wavelengths (nm)	1310, 1550
Electrical interfaces	DS1, DS3, STS-1e, STS-3e	Electrical interfaces [a]	1.5M (DS1), 2M (E1), 34M (E3), 45M (DS3), 140M (E4), STM-0e, STM-1e
DS1 framing	Unframed, SF, ESF, SLC-96	2M (E1) framing	Unframed, PCM30, PCM31, PCM30 CRC-4, PCM31 CRC-4
DS3 framing	Unframed, M13, C-bit parity	34M (E3), 140M (E4) framing	Unframed (not applicable to E2), framed
Clocking	Internal, loop-timed, external (BITS)	Clocking	Internal, loop-timed, external (MTS/SETS), 2 MHz
Mappings			
VT1.5	Bulk, DS1	AU-3-TU-11, AU-4-TU-11	Bulk, 1.5M,
VT2	Bulk, E1	AU-3 -TU-12, AU-4-TU-12	Bulk, 1.5M, 2M
STS-1 SPE	Bulk, DS3	AU-3-Bulk, 34M, 45M, TU-3-AU-4	Bulk, 34M, 45M
STS-3c	Bulk	AU-4	Bulk, 140M
SONET overhead analysis and manipulation	A1, A2, J0, E1, F1, D1-D12, K1, K2, S1, M0, M1, E2, J1, C2, G1, F2, H4, Z3, Z4, Z5, N1, N2, Z6, Z7	SDH overhead analysis and manipulation	A1, A2, J0, E1, F1, D1-D12, K1, K2, S1, M0, M1 G1, F2, F3, K3, N1, N2, K4, E2, J1, C2, H4
Error insertion			
DS1	Framing bit, BPV, CRC-6, bit error, EXZ	E1 (2M)	Bit error, FAS, CV, CRC-4, E-bit
DS3	BPV, C-bit, F-bit, P-bit, FEBE, bit error, EXZ	E3 (34M), E4 (140M)	Bit error, FAS, CV (not applicable to E2)
STS-1e, STS-3e	Section BIP (B1), line BIP (B2), path BIP (B3), BIP-2, REI-L, REI-P, REI-V, BPV, FAS, CV, bit error	STM-0e, STM-1e	RS-BIP (B1), MS-BIP (B2), HP-BIP (B3), MS-REI, HP-REI, LP-BIP-2, LP-REI, CV, FAS, bit error
Error measurement			
DS1	Framing bit, BPV, CRC-6, EXZ, bit error	E1 (2M)	Bit error, FAS, CV, CRC-4, E-bit
DS3	BPV, C-bit, F-bit, P-bit, FEBE, bit error, EXZ	E3 (34M), E4 (140M)	Bit error, FAS, CV (not applicable to E2)
STS-1e, STS-3e	Section BIP (B1), line BIP (B2), path BIP (B3), BIP-2, REI-L, REI-P, REI-V, BPV, FAS, CV, bit error	STM-0e, STM-1e	RS-BIP (B1), MS-BIP (B2), HP-BIP (B3), MS-REI, HP-REI, LP-BIP-2, LP-REI, CV, FAS, bit error
Alarm insertion			
DS1	LOS, RAI, AIS, OOF, pattern loss	E1 (2M)	LOS, LOS Mframe, LOF, AIS, TS16 AIS, RAI, RAI Mframe, pattern loss
DS3	LOS, RDI, AIS, OOF, DS3 idle, pattern loss	E3 (34M), E4 (140M)	LOS, LOF, RAI, AIS, pattern loss
STS-1e, STS-3e	LOS, LOF-S, SEF, AIS-L, RDI-L, AIS-P, LOP-P, LOM, PDI-P, RDI-P, ERDI-PCD, ERDI-PPD, ERDI-PSD, UNEQ-P, AIS-V, LOP-V, RDI-V, ERDI-VCD, ERDI-VPD, ERDI-VSD, RFI-V, UNEQ-V, pattern loss	STM-0e, STM-1e	LOS, LOF, OOF, MS-AIS, MS-RDI, AU-AIS, AU-LOP, H4-LOM, HP-ERDI-CD, HP-ERDI-PD, HP-ERDI-SD, LP-ERDI-CD, LP-ERDI-PD, LP-ERDI-SD, HP-UNEQ, TU-AIS, LP-RFI, LP-RDI, LP-RFI, LP-UNEQ, pattern loss
Alarm detection			
DS1	LOS, LOC, RAI, AIS, OOF, pattern loss	E1 (2M)	LOS, LOS Mframe, LOC, LOF, AIS, TS16 AIS, RAI, RAI Mframe, pattern loss
DS3	LOS, LOC, RDI, AIS, OOF, DS3 idle, pattern loss	E3 (34M), E4 (140M)	LOS, LOC, LOF, RAI, AIS, pattern loss
STS-1e, STS-3e	LOS, LOC, LOF-S, SEF, TIM-S, AIS-L, RDI-L, AIS-P, LOP-P, LOM, PDI-P, RDI-P, ERDI-PCD, ERDI-PSD, PLM-P, UNEQ-P, TIM-P, AIS-V, LOP-V, RDI-V, ERDI-VCD, ERDI-VPD, ERDI-VSD, RFI-V, UNEQ-V, TIM-V, PLM-V, pattern loss	STM-0e, STM-1e	LOS, RS-LOF, LOC, RS-OOF, RS-TIM, MS-AIS, MS-RDI, AU-AIS, AU-LOP, H4-LOM, HP-RDI, HP-ERDI-CD, HP-ERDI-PD, HP-ERDI-SD, LP-ERDI-CD, LP-ERDI-PD, LP-ERDI-SD, HP-PLM, HP-UNEQ, HP-TIM, TU-AIS, LP-RFI, LP-RDI, LP-RFI, LP-UNEQ, LP-TIM, LP-PLM, pattern loss
	Frequency alarm on all supported interfaces		
Patterns			
DS0	2E9-1, 2E11-1, 2E20-1, 1100, 1010, 1111, 0000, 1-in-8, 1-in-16, 3-in-24, 32 bit programmable (inverted or non-inverted), bit errors	E0 (64K)	2E9-1, 2E11-1, 2E20-1, 1100, 1010, 1111, 0000, 1-in-8, 1-in-16, 3-in-24, 32 bit programmable (inverted or non-inverted), bit errors
DS1	2E9-1, 2E11-1, 2E15-1, 2E20-1, 2E23-1, 2E31-1, 1100, 1010, 1111, 0000, QRSS, 1-in-8, 1-in-16, 3-in-24, 32 bit programmable (inverted or non-inverted), T1-DALY, 55-octet, bit errors	E1 (2M)	2E9-1, 2E11-1, 2E15-1, 2E20-1, 2E23-1, 2E31-1, 1100, 1010, 1111, 0000, 1-in-8, 1-in-16, 3-in-24, 32 bit programmable (inverted or non-inverted), bit errors
DS3	2E9-1, 2E11-1, 2E15-1, 2E20-1, 2E23-1, 2E31-1, 1100, 1010, 1111, 0000, 1-in-8, 1-in-16, 3-in-24, 32 bit programmable (inverted or non-inverted), bit errors	E3 (34M), E4 (140M)	2E9-1, 2E11-1, 2E15-1, 2E20-1, 2E23-1, 2E31-1, 1100, 1010, 1111, 0000, 1-in-8, 1-in-16, 3-in-24 [b], 32 bit programmable (inverted or non-inverted), bit errors
VT1.5/2	2E9-1, 2E11-1, 2E15-1, 2E20-1, 2E23-1, 2E31-1, 1100, 1010, 1111, 0000, 1-in-8, 1-in-16, 32 bit programmable (inverted or non-inverted), bit errors	TU-11/12/3	2E9-1, 2E11-1, 2E15-1, 2E20-1, 2E23-1, 2E31-1, 1100, 1010, 1111, 0000, 1-in-8, 1-in-16, 32 bit programmable (inverted or non-inverted), bit errors
STS-1, STS-3c	2E9-1, 2E11-1, 2E15-1, 2E20-1, 2E23-1, 2E31-1, 1100, 1010, 1111, 0000, 1-in-8, 1-in-16, 32 bit programmable (inverted or non-inverted), bit errors	AU-3/AU-4	2E9-1, 2E11-1, 2E15-1, 2E20-1, 2E23-1, 2E31-1, 1100, 1010, 1111, 0000, 1-in-8, 1-in-16, 32 bit programmable (inverted or non-inverted), bit errors
	Pattern loss and bit-error generation and analysis supported on all patterns		

Notes

a. 1.5M (DS1) and 45M (DS3) interfaces described under SONET and DSn column.

b. Not supported for E4 (140M).

ADDITIONAL TEST AND MEASUREMENT FUNCTIONS

Power measurements	Supports power measurements, displayed in dBm (dBdsx for DS1), for optical and electrical interfaces.
Frequency measurements	Supports clock frequency measurements (i.e., received frequency and deviation of the input signal clock from nominal frequency), displayed in ppm and bit/s (bps), for optical and electrical interfaces.
Frequency offset generation	Supports offsetting the clock of the transmitted signal on a selected interface to exercise clock recovery circuitry on network elements.
Dual DSn receivers	Supports two DS1 or DS3 receivers, allowing users to simultaneously monitor two directions of a circuit under test in parallel, resulting in quick isolation of the source of errors.

Performance monitoring
The following ITU-T recommendations, and corresponding performance monitoring parameters, are supported on the IQS-8805.

ITU-T recommendation	Performance monitoring statistics
G.821	ES, EFS, EC, SES, UAS, ESR, SESR, DM
G.826	ES, EFS, EB, SES, BBE, UAS, ERS, SESR, BBER
G.828	ES, EFS, EB, SES, BBE, SEP, UAS, ESR, SESR, BBER, SEPI
G.829	ES, EFS, EB, SES, BBE, UAS, ESR, SESR, BBER
M.2100	ES, SES, UAS, ESR, SESR
M.2101	ES, SES, BBE, UAS, ESR, SESR, BBER

Pointer adjustment and analysis
Generation and analysis of HO/AU and LO/TU pointer adjustments as per GR-253, and ITU-T G.703

Generation	Analysis
› Pointer increment and decrement › Pointer jump with or without NDF › Pointer value	› Pointer increments › Pointer decrements › Pointer jumps (NDF, no NDF) › Pointer value and cumulative offset

Programmable error/alarm injection	Ability to inject errors/alarms in the following modes: Manual, Constant Rate, Burst, Periodic Burst and Continuous.
Service disruption time (SDT) measurements	The service disruption time test tool measures the time during which there is a disruption of service due to the network switching from the active channels to the backup channels. User-selectable triggers: All supported alarms and errors. Measurements: last disruption, shortest disruption, longest disruption, average disruption, total disruption, and service disruption count.
Round-trip delay (RTD) measurements	The round-trip delay test tool measures the time required for a bit to travel from the IQS-8805 transmitter back to its receiver after crossing a far-end loopback. Measurements are supported on all supported IQS-8805 interfaces and mappings. Measurements: last RTD time, minimum, maximum, average, measurement count (no. of successful RTD tests), failed measurement count.
APS message control and monitoring	Ability to monitor and set up automatic protection switching messages (K1/K2 byte of SONET/SDH overhead).
Synchronization status	Ability to monitor and set up synchronization status messages (S1 byte of SONET/SDH overhead).
Signal label control and monitoring	Ability to monitor and set up payload signal labels (C2, V5 byte of SONET/SDH overhead).
Through mode	Ability to perform Through mode analysis of any incoming electrical (DSn, PDH) and optical line (OC-3/12/48, STM-1/4/16).
M13 mux/demux	Ability to multiplex/demultiplex a DS1 signal into/from a DS3 signal. (Note: E1 to DS3 mux/demux available with G.747 software option.)
DS1 FDL	Support for DS1 Facility Data Link testing.
DS1 loopcodes	Support for generation of DS1 in-band loopcodes with the availability of up to 10 pairs of user-defined loopcodes.
NI/CSU loopback emulation	Ability to respond to DS1 in-band/out-of-band loopcodes.
DS3 FEAC	Support for DS3 far-end alarms and looopback codewords.
DS1/DS3 auto detection	Ability to automatically detect DS1/DS3 line coding, framing and test pattern
DS1 multipattern	BER test that includes 5 automated patterns: all ones, 1 in 8, 2 in 8, 3 in 2, QRSS
DS1 signaling bits	Ability to monitor the ABCD signalling bits for all 24 DS0 channels
Tandem connection monitoring (TCM) [b]	Tandem connection monitoring (TCM), option 2 [c], is used to monitor the performance of a subsection of a SONET/SDH path routed via different network providers. The IQS-8805 supports transmitting and receiving alarms and errors on a TCM link; also, transmission and monitoring of the tandem connection (TC) trace can be generated to verify the connection between TCM equipment. Error generation: TC-IEC, TC-BIP, TC-REI, OEI Error analysis: TC-IEC, TC-REI, OEI, TC-VIOL Alarm generation: TC-RDI, TC-UNEQ, ODI, TC-LTC, TC-IAIS Alarm analysis: TC-TIM, TC-RDI, TC-UNEQ, ODI, TC-LTC, TC-IAIS

Notes

a. Not supported for E4 (140M).

b. HOP and LOP supported.

c. G.707 option 2.

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TEST INTERFACES

DSn: DS1, DS3, Dual DS1 Rx, Dual DS3 Rx

PDH: E1, E3, E4

SONET: STS-1, STS-3

SDH: STM-0e, STM-1e

GENERAL SPECIFICATIONS

Temperature		
operating	0 °C to 40 °C	(32 °F to 104 °F)
storage	−40 °C to 60 °C	(−40 °F to 140 °F)
Size (H x W x D)	114 mm x 36 mm x 282 mm	(4 $^1/_2$ in x 1 $^3/_8$ in x 11 $^1/_8$ in)
Weight (without transceiver)	0.7 kg	(1.4 lb)

ORDERING INFORMATION

IQS-8805-XX-XX

Test options
SONET
SDH
SONET-SDH

Options
DSN [a]
PDH [a]
DS3-G.747
DS1-FDL
DUAL-RX
DS3-FEAC
NI-CSU
TCM

Example: IQS-8805-DSn-DUAL-RX
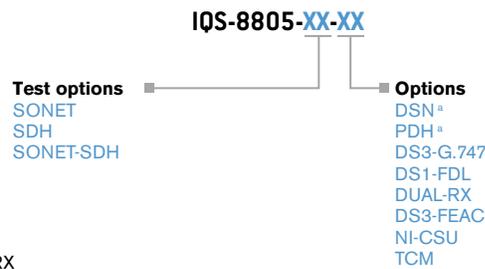
Note

a. Always included.

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