



Loop Conditioning Solutions

DATU®/SASS® Conditioning System

*A Centralized Loop and
Transmission Conditioning
System for Central Offices
and Remote Terminals*

The DATU/SASS Conditioning System gives technicians the ability to assess physical and electrical characteristics of a line from any point on the loop. It also provides a fast, easy way to condition lines and to ensure sufficient signal quality and functioning of subscriber lines. A one-minute phone call from a butt-in test set allows a technician to access the DATU system or SASS unit and apply various conditions to the line under test. Open the line, short the line, perform a 30-tone sweep, and more – all without any intervention from the service center or CO technician! It saves both time and money.

Allowing technicians access to the cable plant, the DATU Loop Conditioning System even works in situations where DC bypass pairs are defective or nonexistent, since the DATU-RT unit (one component of the DATU system) is configurable to facilitate conditioning the pair gain lines from the remote terminal/digital loop carrier (DLC). Plus, the DATU system now features 10-digit dialing to meet the growing needs of telcos today.

Simply call the DATU system with a butt-in test set, dial a user password (assigned by the telco), and enter the phone number of the line under test. The DATU system will reply with a voice prompt for the functions available to locate troubles on the line by using a handheld tester.

The remotely accessible SASS Transmission Conditioning Unit provides a fast, easy way to condition lines and to ensure sufficient signal quality and functioning of subscriber services. Featuring a variety of test tones, including single, three, and 10-tone slopes as well as a 30-tone sweep, the SASS Transmission Conditioning Unit is also designed for instant access with a butt-in test set. It also automatically identifies the phone number from which the technician is calling.



next level solutions

*loop
conditioning*

DATU/SASS System Components:***DATU Loop Conditioning System (DATU-LC)***

An MFT (Metallic Facility Terminal) Bay plug-in used for interactive loop conditioning. Technicians dial-up the DATU system from a subscriber line under test (on non-service-affecting trouble tickets) or from another working line in order to condition the troubled line for a specific test. These specific tests, which can be performed with a variety of popular handheld test sets, help identify troubles on the line such as bridged taps, load coils and longitudinal imbalance.

P/N: 24820-001

DATU Remote Terminal Unit (DATU-RT)

An MFT Bay plug-in module (DATU-LC with Remote Terminal Option) designed to expand DATU Loop Conditioning features to DLC-derived access lines when a DC test pair is not available or is out of operating limits. The DATU-RT consists of the above DATU-LC functions and is often used in conjunction with a Metallic Access Unit (MAU) located in remote terminals/DLCs.

P/N: 24820-003

***Metallic Access Unit (MAU)***

A device installed in the remote terminal of a DLC that provides a means to condition subscriber drops without the need for a DC test pair from the DLC to the central office. Ideal for fiber-fed applications.

P/N: 24840-002

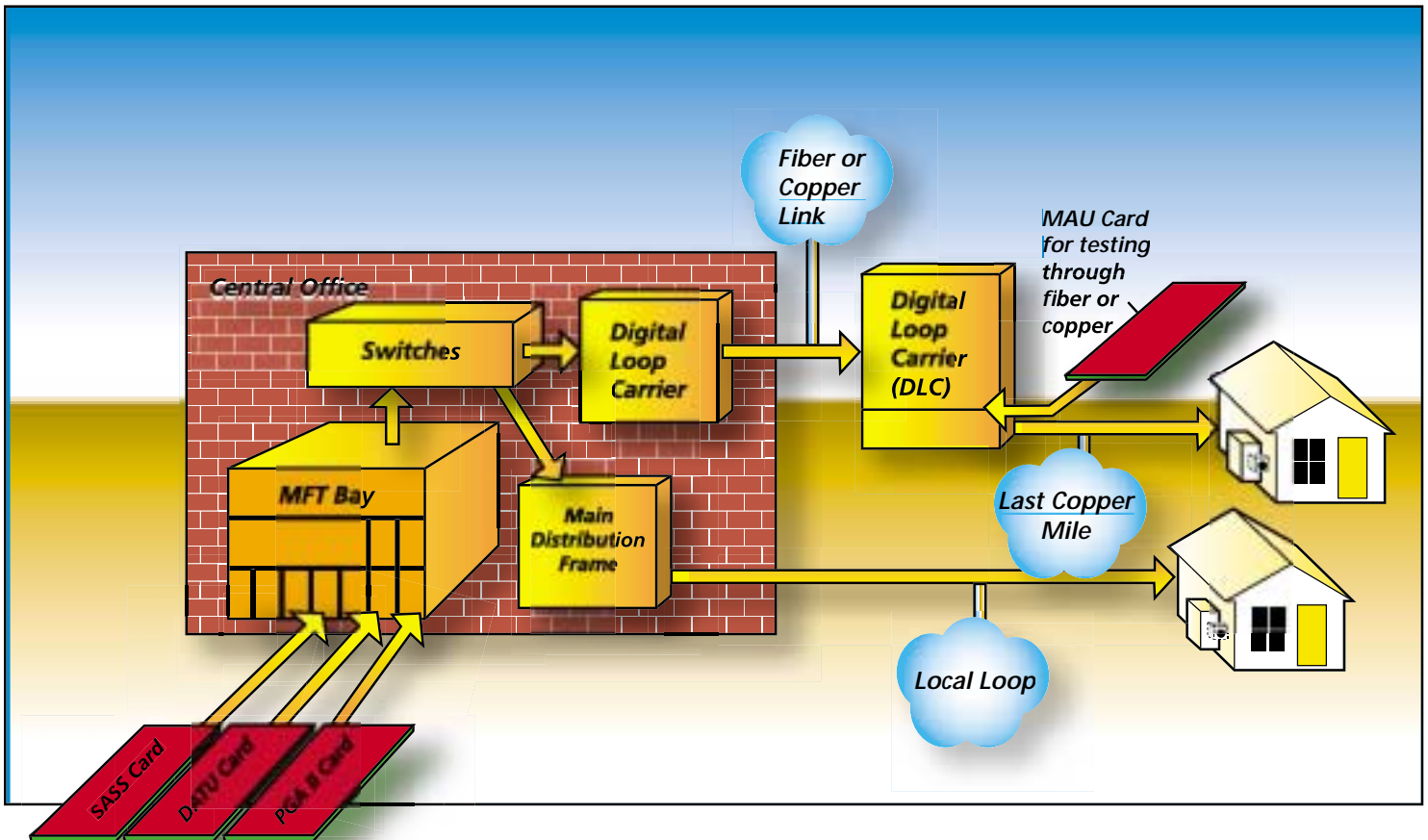
***Pair Gain Applique IIS (PGA IIS)***

The PGA IIS allows the DATU system to access and condition subscriber lines on both Integrated and Universal Digital Loop Carriers. An MFT-based plug-in module, the Pair Gain Applique is designed to interface the DATU-LC or DATU-RT units with the Pair Gain Test Controller, Test Bus Control Unit, or Extended Test Controller.

P/N: 24810-002



Loop Conditioning Solutions



SASS Transmission Conditioning Unit

An MFT Bay plug-in module, the SASS Transmission Conditioning Unit allows technicians to condition a line and ensure sufficient signal quality and functioning of subscriber services. A technician can access the SASS unit with a butt-in test set to verify a line's phone number and capacity to support voice and data.

P/N: 24800-300



Trunk Share Applique (TSA)

An MFT-based plug-in module designed to interface with an existing no-test trunk in those applications where traffic volume is of a level that sharing the No-Test Trunk will not degrade normal testing procedures.

P/N: 24800-103

DATU System: Features and Functions

● **Audio Monitor**

Since some line faults cause the line to appear to be busy even though the subscriber is not using the phone, Audio Monitoring helps technicians hear for themselves whether a line is busy due to conversation on the line or if the line is busy, but quiet. Audio Monitor is automatically selected every time a new line is accessed.

● **Opens**

With the aid of a handheld tester, helps measure or test for factors that may be impairing the integrity of a line, such as load coils, bridged taps, foreign AC/DC voltage, resistive balance and others. Plus, the technician doesn't have to depend on a CO technician to pull a coil at the frame. This saves both time and money.

● **Shorts**

With the aid of a handheld tester, conditions the line to help detect loop length, resistive balance and other factors — all of which can impair the integrity of a line. Allows technicians to perform resistance measurements and compare known opens to the resistance reading to see if there are bridged taps present. Also allows technicians to RFL (Resistive Fault Locate) a single-sided trouble without having someone at the CO pull a coil and short the line.

● **Short to Ground: Tip to Ground, Ring to Ground, or Tip and Ring to Ground**

Since any high resistance opens on one of the conductors will show up as a higher resistance to ground on that leg of the pair, a short to ground allows technicians to use a test set to identify bridged taps or to determine which conductor is having problems — if one conductor has a different resistance reading than the other, then the technician knows there is a problem with one of them.

● **High Level Test Tone**

If a technician doesn't know where the problem pair is, he can dial up the DATU system, put a high level test tone on the line he's looking for, and then use a probe to find the right pair.

● **High Level Tone on Ring**

If a technician is at a noisy cross-box with lots of AC induction, he can send tone on one side to ground so that the tone is easier to pick up. The tracer tone can then be found field-side of the short.

● **Low Level Test Tone**

A technician can put a tone on the line while someone is talking so as not to disturb the customer's call (only the technician can hear the tone, not the customer).

● **Single Line Access**

Many times the only line available is the line the technician has been dispatched on. Single Line Access allows a technician to condition the line under test by calling in from that very line. If the line under test is the only one available, the technician can still condition the line — even from the customer premises.

● **Hold**

A technician can dial from one place, put tone on for a set period of time, hang up, drive somewhere else, and continue testing.

● **Forced Disconnect**

This ensures that the DATU system will be available to the next technician after a technician hangs up.

Benefits

Allows technicians to monitor traffic, tone, and noise on a line under test. Allows the technician to listen to the noise or traffic on the line accessed. It will scramble the traffic and, although unintelligible, will allow the technician to determine what kind of noise/traffic is on the line (modem, FAX, voice, or crosstalk).

Opens the subscriber line by removing battery and ground.

Places a metallic short across the tip and ring of the subscriber line.

The DATU system can short both conductors to ground at the CO. This establishes a metallic connection between tip, ring, and ground. If the Pair Gain remote is equipped with an MAU card, the DATU system can short both conductors to ground at the remote site. This allows technicians to check the resistive balance of the line under test by reading tip to ground and ring to ground resistances.

Places a tracer tone on the line. This is a 577 Hz tone interrupted at 120 IPM (interruptions per minute). It is easily picked up with an inductive probe or a butt-in test set in Monitor mode.

If the line under test has a dispatch test result of a shorted pair, then the DATU system can put a 577 Hz tracer tone on a single conductor with the other conductor shorted to ground.

577 Hz longitudinal tracing tone, interrupted 4 times per second, to identify a line. The low level tracer tone can be used on busy lines.

Single Line Access allows a technician to dial-up the DATU system and command it to access a subscriber's line after disconnecting from the access line of the DATU system.

Commands the DATU system to continue a line condition for a specified time, even after disconnecting from the DATU system's access line.

Allows the technician to disconnect from the system.

SASS Unit: Features and Functions

● **Voice ANI (Automated Number Identification)**

Automatic Number Identification helps technicians identify the line to verify that the right pair is being used. This feature also provides a caller ID function when used in conjunction with the Call-Back feature (see below).

● **Single Tone Generation**

This feature allows technicians to measure circuit losses and verify the characteristics of 30 frequencies.

● **3-Tone Slope**

By using a handheld tester, technicians can detect bad coils by analyzing loss measurements. This feature also provides a way to verify the line's transmission capabilities with low-, mid- and high-range frequencies.

● **10-Tone Slope**

This feature gives the technician the capability to perform basic qualifications for bandwidth transmissions with a handheld tester.

● **30-Tone Sweep**

With a 3-tone slope the line may appear to be good (not loaded), so a 30-tone sweep may be necessary for more in-depth analysis of the line.

● **Quiet Termination**

The Quiet Termination feature provides a precision termination to allow a technician to measure the amount of noise on the line due to factors such as a line imbalance, a high power influence, a bridged tap, crosstalk, a noisy channel unit, or a defective line card.

● **Call-Back/Caller ID**

This feature verifies that all station equipment (phone, fax modem, etc.) is functioning properly. It can also be used as Caller ID, since when the SASS unit calls back, it will also provide the phone number.

● **DTMF Test**

The DTMF test ensures that the phone the technician is calling from is capable of generating DTMF tones correctly.

● **Uses Single Number**

All SASS unit functions can be accessed by calling a single number, freeing up entire NXX groups for additional customers.

● **Password Protection/Interactive Voice Response (a feature of both DATU and SASS products)**

This feature ensures that no unauthorized users will have access to the DATU system or SASS unit. If a technician sets up a separate administrator mode, he can change the password and prevent the dialup of the DATU system or SASS unit without access.

Benefits

An automated response will identify the number the technicians are calling from. The SASS unit can then be controlled via DTMF to condition a line to be tested with a handheld test set.

Applies a 1004 Hz tone at 0 dBm across tip and ring. Technicians can then use various portable test sets to identify line loss.

Sends 3 tones: 404 Hz, 1004 Hz, and 2804 Hz tip to ring for basic transmission tests.

Sends 10 tones, from 304 Hz to 3204 Hz for more detailed analysis of transmission characteristics.

Sends tones from 304 Hz to 3204 Hz in 100 Hz increments to identify line problems. With a handheld tester, technicians can detect bridged taps.

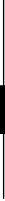
Applies a precision termination across tip and ring at user-selectable 600, 900, or 735 Ohms to identify noise on the line.

Automated instructions prompt and generate a call-back to verify station equipment.

Allows technician to test the station-set keypad for proper DTMF tone generation.

Freeing up NXX groups means that the technicians have a lot more phone numbers that can be used for new customers.

Requires user to enter a password in order to access the DATU system or SASS unit. There is password protection for both user and administrator modes of access. Programmable modes of access and tone parameters for level, duration, and impedance are accessible through interactive voice response.



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