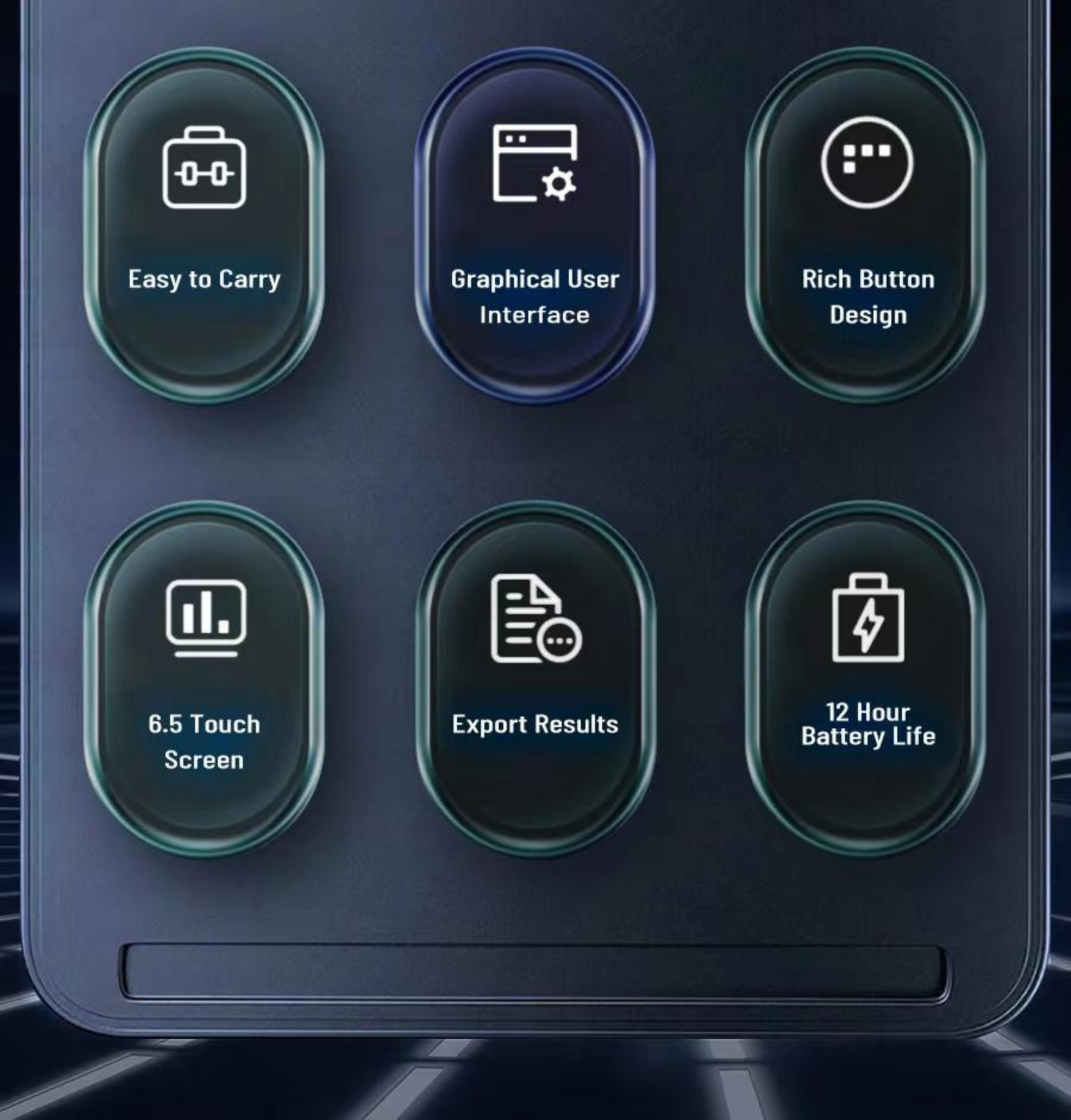
155M transmission tester
OTDR network comprehensive tester

G15A Intelligent Network Testing Platform

Communication technology connection
Service testing function


Easy to Carry
Graphical User Interface
Rich Button Design
6.5 Touch Screen
Export Results
12 Hour Battery Life

OTDR APPLICATIONS

Support online testing of wavelength 1490/1625/1650nm
Dynamic range up to 42db


TFN
F1
MENU
F2
SAVE
F3
PRINT SCREEN
F4
HELP
F5
F6
F7
F8
F9
SYSTEM
1
2
3
4
5
6
7
8
9
0
CANCEL
SELECT
RUN
STOP

OTDR module

Supports 1310/1550nm wavelength and dynamic range up to 47dB
Short enough blind spots (event blind spot 0.5m, attenuation blind spot 2.5m) and up to 256000 sampling points to ensure accurate testing of OTDR throughout the entire fiber optic link;
Supports online testing at a wavelength of 1490/1625/1650nm, with a dynamic range of up to 42dB and the ability to pass through a 1:128 splitter at most;
Support SR-4731. sor file format;
Quick testing mode with automatic trace diagnosis, one click setting, and event detection;
The double marking line function is used for distance, attenuation, and fusion loss measurement;
Support PC offline analysis software for offline data analysis and printing;
Support VFL Visual fault locator function;
Optional optical power meter and light source testing function;
Optional iOTA intelligent optical link topology analysis and testing function;
Optional iNET intelligent network testing tool functionality;
Optional fiber optic end face microscope testing function;

Functional characteristics
Support multiple testing functions

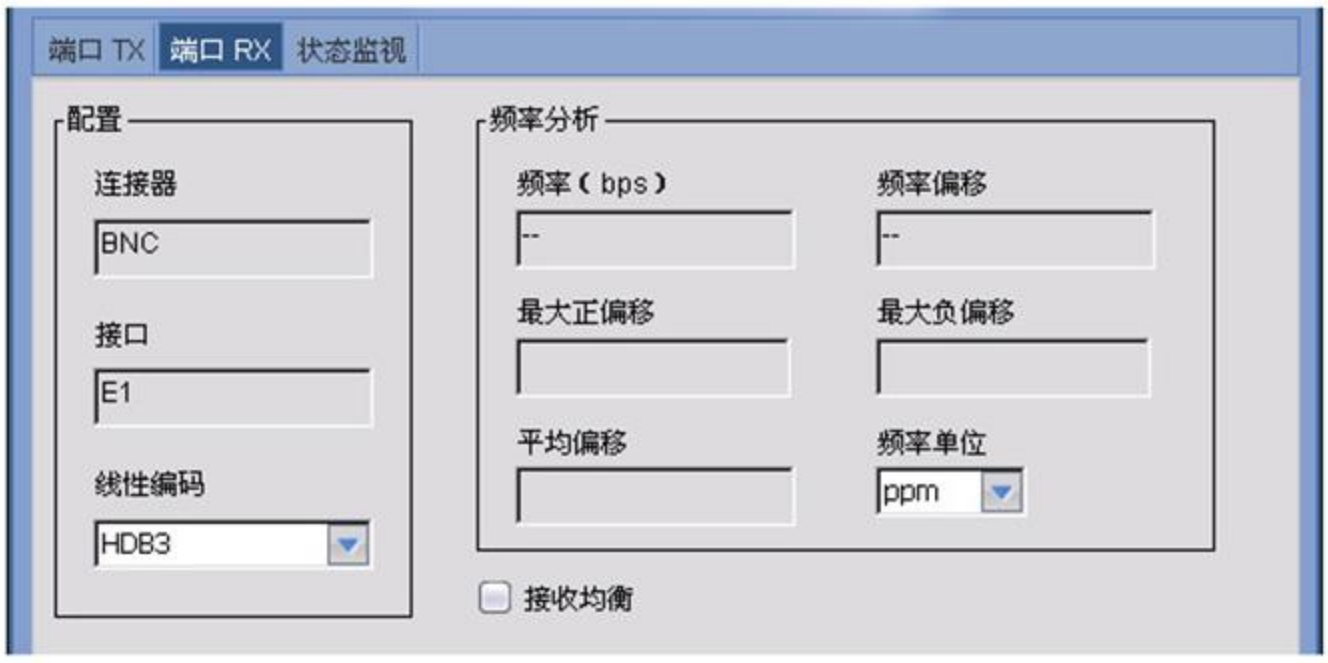
- Support DSN/PDH testing function for DS1/DS3, E1/E3/E4 interfaces
- Supports STM-1/OC-3 electrical port and SDH/SONET testing function for STM-1/OC-3 optical port
- Support 120 ohm E1 testing function based on RJ48 interface
- PDH/SDH error testing and performance analysis
- SDH/SONET overhead monitoring and control
- Pointer monitoring and adjustment, generating G.783 pointer test sequence
- Automatic protection switching time test
- Supports payload mapping from VC4-16C/STS-48C to VC12/NVT2VC11/VT1.5, including PDH/DSN payload (E1/E2/E3/E4DS1/DS3)

OPERATION

Multiple testing modes Interface display

Schematic diagram of the main interface of SDH application program

Port RX schematic diagram

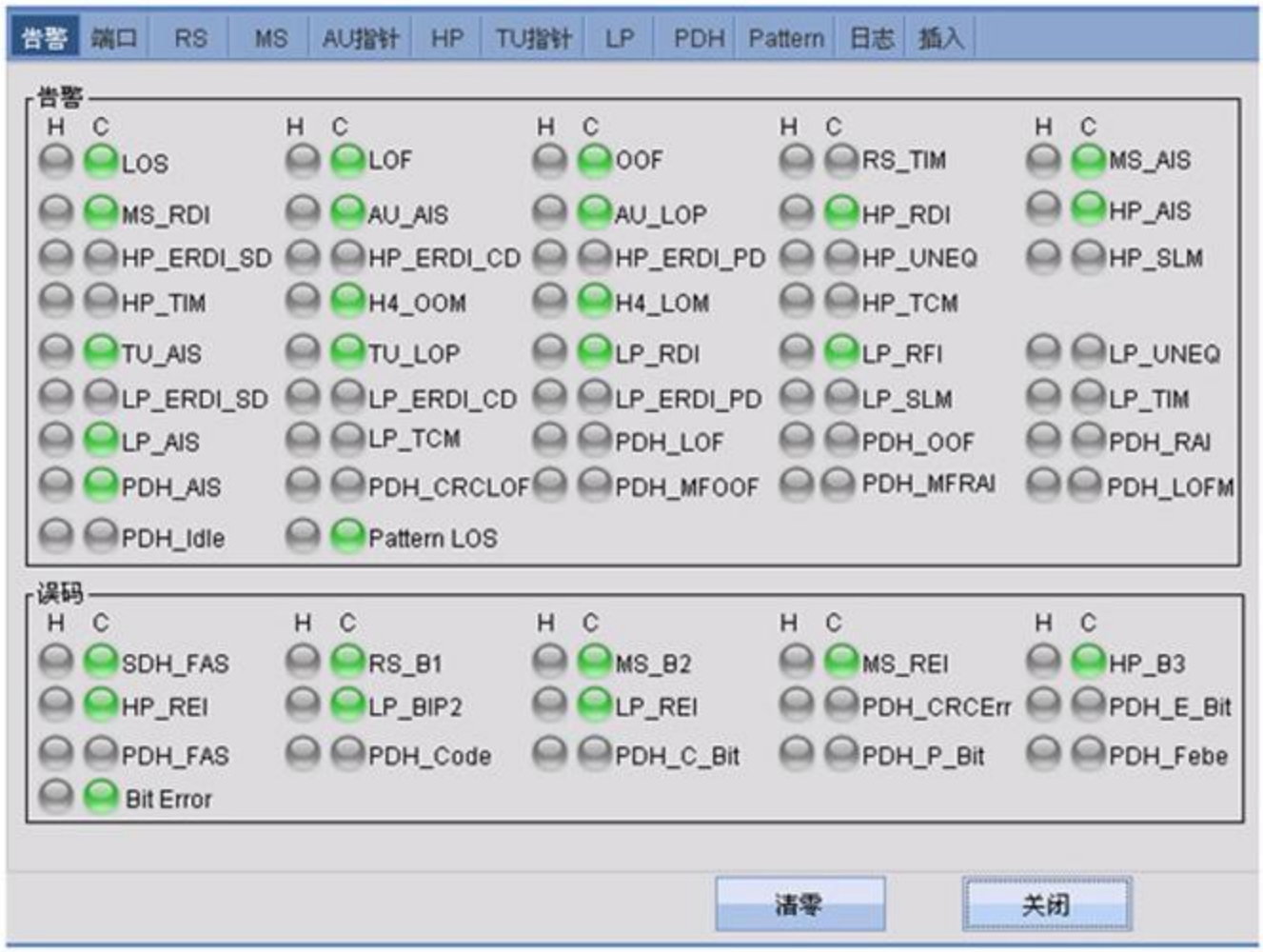


Port TX schematic diagram

MS TX schematic diagram

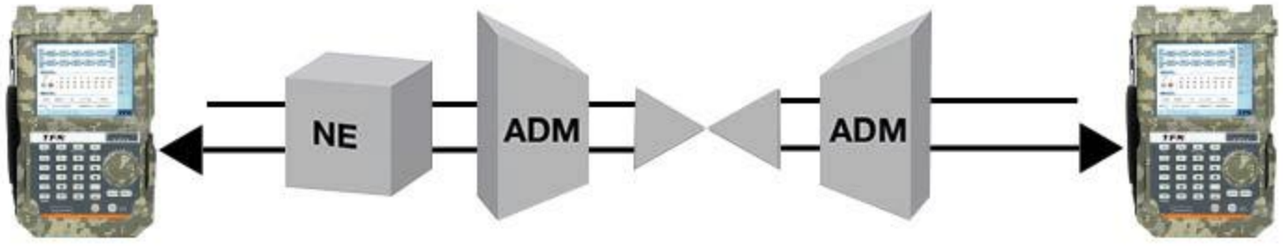
MS RX schematic diagram

Schematic diagram of status monitoring

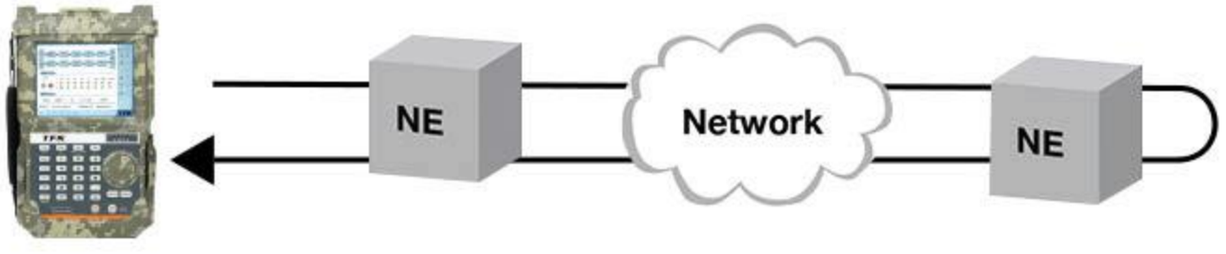


Off-line Testing

- End to end error free transmission verification
- Automatic protection switching verification
- SDH/SONET mapping verification

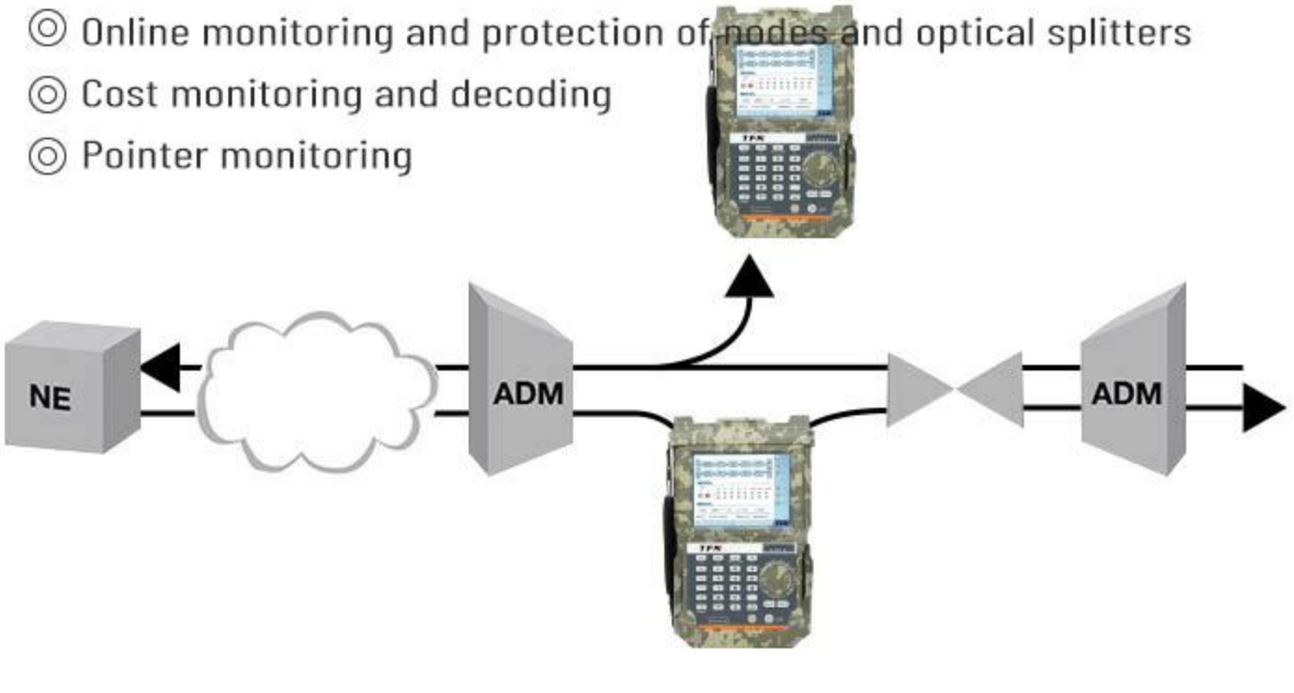


Loop back delay test



Online testing

- Through mode, advanced through mode
- Online monitoring and protection of nodes and optical splitters
- Cost monitoring and decoding
- Pointer monitoring



FUNCTIONAL

PARAMETER INTRODUCTION

ALL YOU WANT TO KNOW IS HERE

Powerful features

Modular and graphical
Suitable for outdoor use

USB data interface	2 of USB 2.0 A-type interface; 1 of USB2.0 Mini interface
Ethernet port	Ethernet 10/100, interface: RJ45 (port)
Storage capacity	8G, optional 16H, 32G, 64G
Audio interface	For connecting optional headphones, 3.5mm diameter jack
Size and weight	FT100:319 (H) X202 (W) X105 (D) mm; 2.8kg D240S: 25 (H) X97 (W) x259 (D) mm; 0.4kg
Temperature	Working temperature: -10 ° C to 50 ° C; Storage temperature: -40 ℃ to 70 ℃
Relative humidity	0% to 95% (non condensing)
Vibration	<1.5g at 10Hz to 500Hz (on three main axes)
Mechanical impact	<750cm on six faces and eight main edges (according to GR-196-CORE standard)
EMC	EN55022/CIPSR22, EN61000-3-0, EN55024
Battery	Rechargeable and replaceable lithium-ion batteries Working time: 3 hours (typical value) Charging time: 6 hours (typical value)
Power supply	Input: 100 to 240V (AC), 50Hz/60Hz, 1.6A Output: 19V, 4A

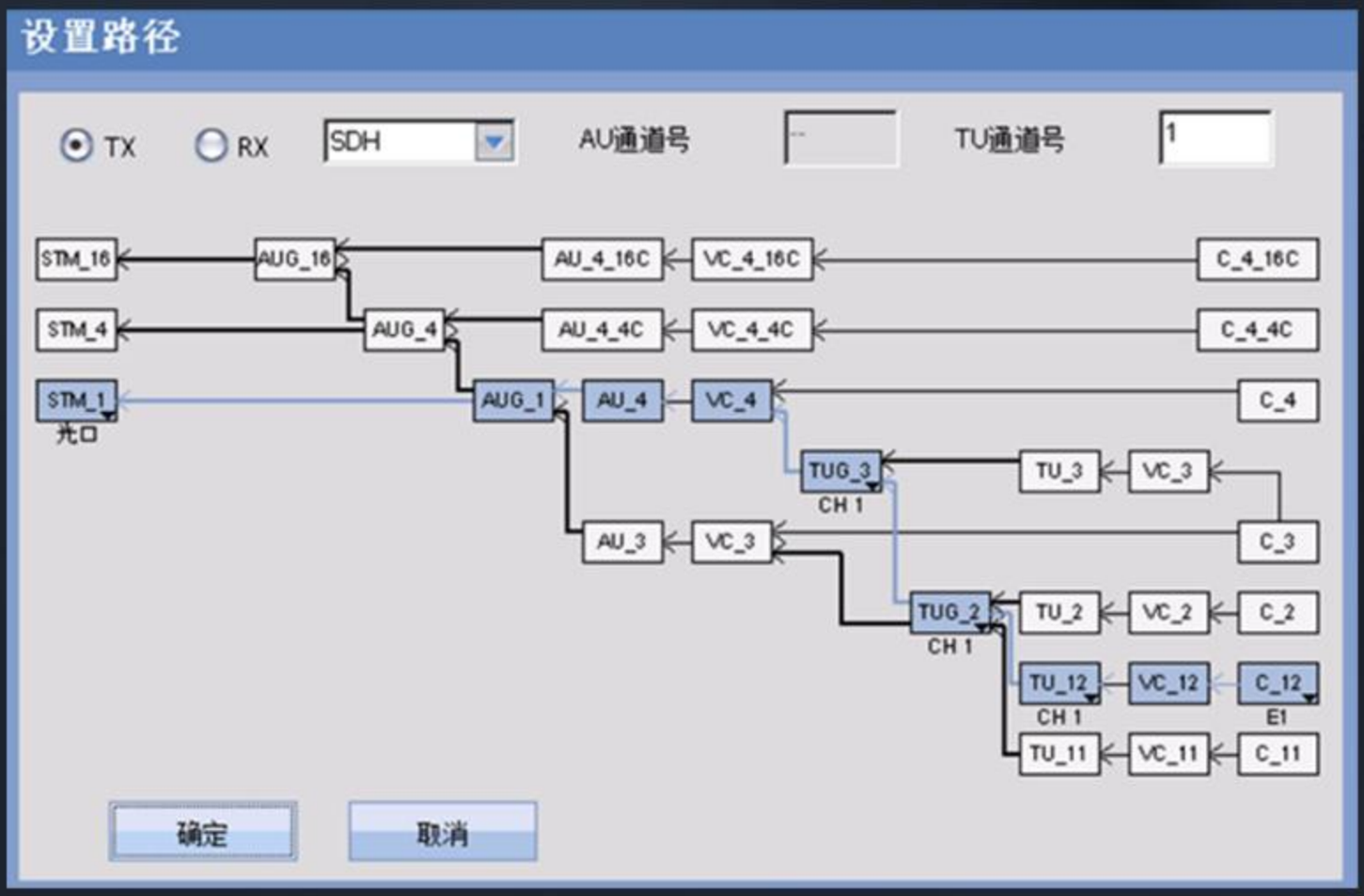
CONFIGURATION CHECKLIST

Host, instrument pack, battery, optical module, electronic CD, list, certificate of conformity, power adapter, 2M 75 ohm test cable LC/PC full duplex single-mode fiber optic test jumper, RJ48 to BNC test jumper

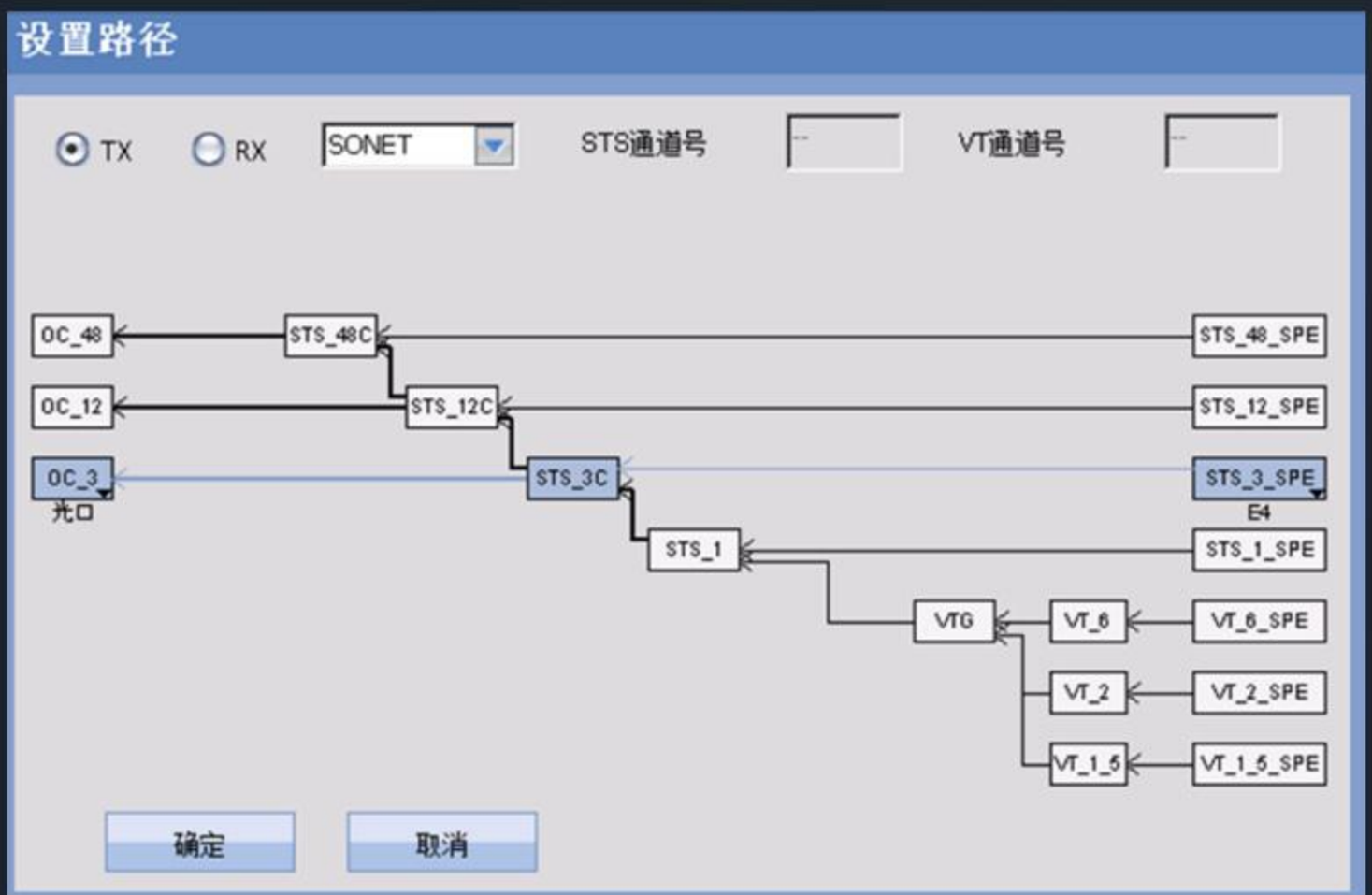
SDH/SONET testing

Test Port	● STM-16/STM-4/STM-1, C-48/OC-12/OC-3 optical interface: SFP, 1 unit User selectable optical modules: 1310nm, 1550nm ● STM-1e, STS-3 electrical port: BNC, 1 pair
Test mode	● Offline testing ● Online testing
Operation mode	● Point-to-point testing mode ● Through mode ● Advanced through mode: able to modify SOH/TOH overhead, insert error codes and alarms
Frame structure	● SDH: Compliant with ITU-T G.707 ● SONET: Compliant with Telcordia GR-253
Line coding	NRZ
Clock reference	● Internal clock accuracy: 4.6 ppm, optimal at 2 ppm ● Frequency offset: soil 50ppm (1 ppm step size) ● Restore Clock ● TTL level external 2.048MHz clock ● E1: 2.048Mbps, D1: 1.544Mbps+50ppm
Received signal rate	+50ppm Frequency offset indication resolution: 1ppm soil
TCM Ton Format	ITU-T G783, G.707 Annex D and Annex E, POH Bytes: HP-N1/LP-N1/LP-N2 for SDH, Z5/76 for SONET TCM Access Point ID (Apid): 15 byte ASCII sequence, CRC-7
Scrambling code	SDH: Compliant with ITU-TG.707 SONET: Compliant with Telcordia GR-253

SDH mapping



SONET mapping



Give an alarm	Alarm monitoring and generation ● SDH: LOS,LOF,OOF, MS-AIS,MS-RDIAU-AIS,AU-LOP HP-PLMHP-UNEQ, HP-TIM, HP-RDI TU-LOM, TU-AIS,TU-LOP LP-PLM, LP-UNEQLP-TIM, LP-RDI LP-RFI LSS ● SONET: LOS, LOF, OOF AIS-L RDI-L, AIS-P LOP-P TIM-P PLM-P UNEO-PRDI-P LOM-VAIS-V.LOP-V PLMVUNEO-V. RDI-VTIM-V.LSS ● TCM: TC-LTCTC-TIMTC-UNEQ, TCAIS,TC-RDI TC-ODI Alarm generation method: ● Continuous alternation ● Sudden
Error code	Error code insertion and monitoring ● SDH: FASB1B2MSREHP-B3 HP-RELLP-B3,LP-BIP2LP-REL Bit Error ● SONET: FAS,B1,B2,REI-L,B3,REI-P, B3-V,BIP2-V,REI-V, Bit Error ● TCM: TC-IEC.TC-BIP2.TC-RETC-OEI Error code insertion method: ● Sustained ● Alternate ● Rate ● Single ● Sudden
Bit test pattern	Pattern generation and detection based on ITU-T0.181 Bulk testing Test pattern support: PRBS9, PRBS11, PRBS15, PRBS20.PRBS23, PRBS31 The test pattern can be reversed User defined pattern (pattern length: 16bit step size)
Pointer	● Display pointer values on the sending and receiving sides ● Support pointer event monitoring and generation ● Supports all G.783 pointer test sequences
Overhead	Generate segment overhead/transmission overhead and channel overhead bytes Display the current segment cost/transmission cost and channel cost bytes All expenses can be decoded, including the decoded J0, J1, J2 bytes All overhead or any specified overhead bit error testing, such as DCC byte bit error testing, capturing and decoding overhead bytes for 256 consecutive frames
SDH branch scanning	Support DS1 signal embedding into VC-11 Support E1 signal embedding into VC-12 Support E2 signal embedding into VC-2 Support E3/DS3 signal embedding into VC-3 Support E4 signal embedding into VC-4
SONET branch scanning	Support DS1 signal embedding into VT1.5 Support E1 signal embedding into VT2 Support E3/DS3 signal embedding into STS-1 Support E4 signal embedding into STS-3c
Intelligent scanning	Capable of automatically scanning remote SDH/SONET configuration information, and automatically configuring ports and mappings

SDH/SONET test results

State	State · Monitoring line alarms and errors · Input level indication of optical interface · Input level indication of electrical interface · Actual interface speed · Frequency offset
Statistics	Statistical information: alarms (seconds and ratios), error codes (numbers, numbers and ratios), pointer operations
Histogram	All alarms and errors can be displayed in graphical mode, allowing users to easily view all alarms and errors at a glance
Error code performance	G.821/G.826/G.828/G.829/M.2100/M.2110 analysis of received signals, based on detected errors and alarms: ES, SES, BBE, AS, UAS, EFS, etc
APS	APS (Automatic Protection Switching) Testing and Analysis · Measure APS switching time. Automatic judgment failure when exceeding 50MS · Trigger Event () Users can choose all PDH/DSn, SDH/SONET alarms or error codes, error code threshold · The number of switches indicated by the APS protocol · K1/K2 Byte Setting and Display · APS switching time measurement resolution: 0.01ms
Loop back delay measurement	Resolution: 1us Maximum testing time: 60.0s

PDH/DSn testing

Test Port	· PDH: E1, E3, E4 1 unit · DSn: DS1, DS3 1 unit Interface: BNC, RJ48 (only applicable for E1 interface testing)
Test mode	· Offline testing · Online testing
Standard	· E1: Compliant with ITU-TG.703 2.048Mbps · DS1: Compliant with ANSI T1.1021.544Mbps · E3: Compliant with ITU-TG.703 34.368Mbps · DS3: Compliant with ANSI 44.736Mbps · E4: Compliant with ITU-TG.703139.264Mbps
Impedance	· E1: 75Ω (unbalanced), 120Ω (balanced) · DS1: 100Ω · E3: 75Ω · DS3: 75Ω · E4: 75Ω
Line coding	· E1: HDB3, AMI · DS1: B8ZS, AMI · E3: HDB3 · DS3: B3ZS, · E4: CMI
Frame structure	· E1: Non framing, PCM30, PCM31, PCM30CRC, PCM31CRC · DS1: Unconventional frame, SF-D4, ESF · E3: Unconventional frames, framing · DS3: Unconventional frames, framing · E4: Unconventional frames, framing
Clock reference	· Internal clock accuracy: 4.6 ppm Frequency offset: ± 125ppm (1 ppm step size) · Restore Clock · TTL level external 2.048MHz clock · E1: 2.048Mbps, DS1: 1.544Mbps

Received signal rate	±150ppm Frequency offset display accuracy: ± 1ppm
Testing method	· E1: Terminal, monitoring · DS1: Terminal, monitoring · E3: Terminal, monitoring · DS3: Terminal, monitoring · E4: Terminal
Alarm	Alarm generation and monitoring · E1: LOS, LOF, OOF, RAI, AIS, CRCLOFM, MFASOOF, LOFMFAS, MFASRAI, LSS · DS1: LOS, LOF, OOF, RAI, AIS, LSS · E3: LOS, LOF, AIS, RDI · DS3: LOS, LOF, AIS, RAI, LSS, IDLE · E4: LOS, LOF, AIS, RAI, LSS Alarm generation method: · Sustained · Alternate · Sudden
Error code	Error code insertion and monitoring · E1: FAS, CRC4, E-BIT, Code, Bit · DS1: FAS, Code, Bit, CRC6 · E3: FAS, Bit · DS3: FAS, C-BIT, P-BIT, FEBE, BIT · E4: FAS, Bit Error code insertion method: · Sustained · Alternate · Rate · Single · Sudden
Bit pattern testing	Test pattern support: PRBS9, PRBS11, PRBS15, PRBS20.PRBS23, PRBS31 Test pattern support: PRBS9, PRBS11, PRBS15, PRBS20.PRBS23, PRBS31 The test pattern can be reversed User defined pattern (pattern length: 16bit step size)

PDH/DSn test results

State	Current interface information ● Monitoring line alarms and error code displays ● Input level display ● Actual interface speed ● Frequency offset
Statistics	Statistics: Alarm (seconds and ratio), Error code (number, number and ratio), Frequency offset display
Histogram	All alarms and errors can be displayed in graphical mode, allowing users to easily view all alarms and errors at a glance
Error code performance	Analysis of G.821/G.826/M.2100 receiving models, based on detected errors and alarms: ES, SES, AS, UAS, EFS, etc
APS	APS (Automatic Protection Switching) Testing and Analysis ● Measure APS switching time. Automatic judgment failure when exceeding 50MS ● Trigger Event () Users can choose all PDH/DSn alarms or errors, error threshold, etc ● The number of switches indicated by the APS protocol ● APS switching time measurement resolution: 0.01ms
Loop back delay measurement	Resolution: lus Test duration: 60.0 seconds

CONFIGURATION LIST

MATERIAL OBJECT SHOT


G15A
TFN
无模块
D240S
(155M SDH)
2006/ 1/ 1
12: 2:13
TFN
F1
MENU
F2
SAVE
F3
PRINT SCREEN
F4
HELP
F5
F6
F7
F8
F9
SYSTEM
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8
9
0
.
CANCEL
SELECT
RUN
STOP


TFN
F1
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