

FST-6700 2M E1 /Datacom Transmission Analyzers

FST-6700 Series E1 /Datacom tester, 2M Datacom Transmission Analyzers can be used to test the digital channels with 2Mbit/s interfaces and with V.24/V.28/RS232, V.35, V.36, RS449, X.21, RS485, EIA530, EIA530A, and equidirectional G.703 CO 64kbit/s interfaces.



Major Features

LCD large-screen display, 320*240→ lattice, backlight, LED indicator

Hand held, auto configuration→

→ Multi-task operation at one time

Store 20 test results and 9 test→ configurations, with power-off memories

PC operation, store, analysis,→ print

Programmable timer→

Alarm and histogram analysis→

Software→ updating

Major Functions

For 2Mbit/s:

Service-interrupted error testing→

Online error testing→

Framed and unframed signals generation and reception→

2Mbit/s→ unframed error performance testing

2Mbit/s framed N*64kbit/s channel→ error testing

Bit error, coding error, frame error, CRC error and E→ bit error testing

Signal loss alarm, AIS alarm, framed remote alarm,→ multi-framed remote alarm, out-of-frame, and pattern loss alarm

→ Frequency offset testing

Line signal level and frequency testing→

Voice channel signal level and frequency testing→

Pattern→ slip testing

Clock slip testing→

Straightforward signaling→

Audio frequency testing→

Loop circuit delay testing→

→ Automatic protection switching time testing (APS)

Clock bias function→
Sound monitoring→
Duplex 2Mbit/s detecting and→ monitoring
Signal state display. Voice channel content display. Voice→ channel busy indication
Alarm and error histogram analysis→
→ Time slot content analysis, drop and insert signal on each time slot
→ Framed content analysis
G.703 module analysis→
G. 821 /G.→ 826/M. 2100 error analysis
Multi error and alarm inserting→
→ Three input modes (terminating, bridging and monitoring)
Three clock→ options (internal, external and picking-up);

For Datacom:

V.24/RS232/V.28, V.35, V.36, X.21, RS-449,→ RS-485, RS422, EIA-530, EIA-530A datacom testing
SYNCH and ASYNCH→ testing
DTE and DCE emulation→
Bit code testing→
→ Pattern slip testing
Signal loss alarm→
Line signal level and→ frequency testing
Loop delay testing→
Automatic protection→ switching time testing(APS)
G.821, M2100 service interrupt error→ testing

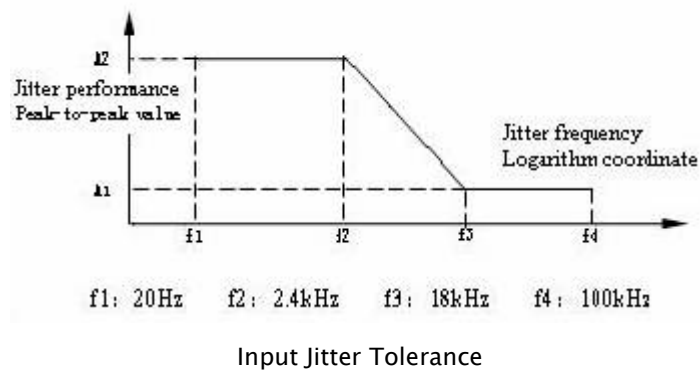
For co-directional 64Kbit/s:

Service interrupt error testing→
Bit code→ testing
Pattern slip testing→
Signal loss, AIS alarm→
Line signal frequency testing
Loop delay testing→
Automatic→ protection switching time testing(APS)
G.821, M.2100 error testing→

Technical Index

2M Technical Index→

- (1) Signal→ input rate: 2048kbit/s±100ppm(G.703 requirement±50PPM)
- (2) Signal coding: HDB3, AMI.
- (3) Input jitter tolerance: Up to the→ requirement of Figure 10.1.



(4) Input balance response: Attenuation complies with the law of square root of frequency, and is within the range of 0 to 6dB at 1024 kHz.

(5) Input Impedance

(5.1) Unbalance terminating: 75Ω

Balance terminating: 120Ω

Reflection loss > 18dB within 50Hz ~ 3100kHz.

(5.2) Unbalance bridging: > 750Ω

Balance bridging: > 1200Ω

(5.3) Unbalance monitoring: 75Ω, 26dB gain

Balance monitoring: 120Ω, 26dB gain

Reflection loss > 18dB within 50Hz ~ 3100kHz.

(6) Signal structure

(6.1) Non-frame structure

(6.2) Frame structure: PCM30, PCM31, PCM30CRC, PCM31CRC

Frame structure complies with the requirement of G. 704.

(7) Testing pattern: $2^6 - 1$, $2^9 - 1$, $2^{11} - 1$, $2^{15} - 1$, $2^{20} - 1$, $2^{23} - 1$, and artificial code

(8) Impedance of output interface:

(8.1) Non-balance 75Ω, up to G. 703

(8.2) Balance 120Ω, up to G. 703.

(9) External clock input

(9.1) Signal form: HDB3, NRZ

(9.2) Balance terminating resistance: 120Ω

Unbalance terminating resistance: 75Ω

Balance bridging resistance: > 1200Ω

Unbalance bridging resistance: > 750Ω

(10) Error code insertion: None, single, or ratio 10⁻¹ ~ 10⁻⁷.

Co-directional 64k Technical Index

(1) Signal input rate: 64 kbit/s ± 100ppm (G.703 requirement ± 100PPM)

(2) Input impedance: Balance 120 Ω, up to G.703

(3) Input jitter tolerance: Up to G.823.

(4) Impedance of output interface: Balance 120Ω, up to G.703

(5) Testing pattern: 2^6-1 , 2^9-1 , $2^{11}-1$, $2^{15}-1$, $2^{20}-1$, $2^{23}-1$, and artificial code

Input Impedance

Datacom Index

(1) Data interface type: V.24, V.35, V.36, X.21, RS-449, RS-485, EIA-530 and EIA-530A.

(2) Generator

(2.1) SYNCH mode

Clock source: Internal or external clock

Phase relation between clock and data: co-direction or reverse direction.

Rate: 1.2, 2.4, 4.8, 9.6, 14.4, 19.2, 38.4, 48, 56(kbps), $N*64\text{kbps}$ ($N=1\sim 32$)

Error: $\pm 15\text{ppm}$ (ppm: parts per million)

(2.2) ASYNCH mode

Rate:

50,75,110,150,200,300,600,1200,2400,3600,4800,7200,9600,14.4k,19.2k,38.4k,57.6k(bps)

Data structure: Word length: 5,6,7,8(bits), Stop bit: 1,2(bits).

Odd-even check: odd, even, 1, 0, none

(2.3) Error code insertion: None, single, or ratio $10^{-1} \sim 10^{-7}$.

(3) Receiver

(3.1) SYNCH mode

Clock source: Internal or external clock

Phase relation between receive clock and receive data: Equidirection or reverse direction.

Clock Rate: 2048kbps at a maximum

(3.2) ASYNCH mode

The rate and data are the same as those of the generator.

(4) Testing pattern: 2^6-1 , 2^9-1 , $2^{11}-1$, $2^{15}-1$, $2^{20}-1$, $2^{23}-1$, and artificial code

Other Parameters

Power supply

(1) Special power adapter

Input: AC220V 50Hz

Output: DC 9V 1A

(2) Internal rechargeable battery

4000mAh, 6V nickel-hydrogen rechargeable battery

Working time: 8 hours

Charging: 8 hours at power-off state, and 12 hours at power-on state.

Dimension and weight

L*W*H: 200*160*42mm

Weight: 950g

Ambient parameters

Operation temperature: $0\sim 40^{\circ}\text{C}$

Storage Temperature: $-30\sim +70^{\circ}\text{C}$

Humidity: 5%~90%, non-condensing

Standard Configuration

No.	Item	Qty
1	FST-6700 Series 2M Transmission Analyzers	1 set
Attached files		
2	User's manual	1 pc
3	Software disc	1 pc
Attached accessories		
4	75Ω Coaxial testing line	1 pc
5	BNC-L9 Testing line CESHIYI	2 pcs
6	RS232 serial line	1 pc
7	Special testing cable of data communication 1(V.24,RS-485,EIA-530,EIA-530A)	1 pc
8	Special testing cable of data communication 2 (RS-449,V.36)	1 pc
9	Special testing cable of data communication 3 (X.21)	1 pc
10	Special testing cable of data communication 4 (V.35)	1 pc
11	G.703 CO special testing cable (64Kb/s coaxial interface)	1 pc
12	Power adapter	1 pc
13	Data self-loop head	1 pc
14	Switch cable	1 pc
15	Handy-case	1 pc
16	Serial printing line (optional)	1 pc

2M/Datcom Transmission Analyzer Table

Item	FST-6700A	FST-6700C	FST-6700E
E1 Measurement	Yes	Yes	Yes
Datcom Measurement	No	Yes	Yes
Audio/Listen	Yes	Yes	Yes
Frequency Deviation	No	Yes	Yes
Pulse Mask	No	Yes	Yes
Co directional 64K	Optional	Optional	Yes
Ethernet	Optional	Optional	Yes
Jitter	Optional	Optional	No
Frame Relay	Optional	Optional	Yes
AC Power Adapter	AC220V 50Hz/DC 9V 1A		
Rechargeable Batteries	5*1.2V AA NiMH batteries		
Operating/Storage Temperature	0°C~50°C/-20~+70°C		
Humidity	5%~95% non-condensing		
Dimensions/Weight	200*160*42mm/2kg		