

TECHNICAL DATA

OTS main unit

TMN interface	RS232/V.24, 10/100 BaseTX, Q2 (RS485), Q2Et (10/100 BaseTX), 2 Mbit/s / G.703
EOW telephone interface	Z (2-wire)
DCC (F1 or E2) interface	64 kbit/s, V11
Performance management	G.826, G.783
21 x 2 Mbit/s interface	G.703 (120/75 Ω)
Mapping/multiplexing	G.707 at paths: VC12/TU-12/TUG-2/TUG-3/VC4/AU-4/AUG/STM-N
3 x 34 Mbit/s interface	G.703 (75 Ω)
Mapping/multiplexing	G.707 at paths: VC3/TU3/TUG-3/VC4/AU-4/AUG/STM-N
Ethernet interface	4 x10/100 BaseTx (IEEE 802.3) 1 x100 BaseFx (IEEE 802.3)
Mapping	GFP-F G.7041 (n x VC12, n x VC3 or VC4)
Capacity adjustment, LCAS	static, dynamic
2 x 155/622 Mbit/s interface	G.957, G.703
Jitter and wander	G.825
Power consumption	max 30 W

OTS-G main unit

Same as OTS except:

Ethernet interface	1x1000 BaseT/BaseX (IEEE 802.3)
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S4ADM-2 unit

Cross-connect	non blocking matrix capacity 160x160 VC4 (up to VC12 level)
Synchronization	according to G.813
2 x 155/622 Mbit/s interface	G.957, G.703
Jitter and wander	G.825
Ethernet interface	5 x10/100 BaseTx (IEEE 802.3) 1 x100 BaseFx (IEEE 802.3) 1 x1000 BaseT/1000 BaseX (IEEE 802.3)
Power consumption	max 30 W

S16ADM-2 unit

Same as S4ADM-2 except:

Cross-connect	capacity 288x288 VC4 (up to VC12 level)
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S4LI-4 unit

4 x 155/622 Mbit/s interface	G.957, G.703
Jitter and wander	G.825
Ethernet interface	2 x10/100 BaseTx (IEEE 802.3) 2 x1000 BaseT/1000 BaseX (IEEE 802.3)
Power consumption	max 27 W

S16LI-2 unit

up to 2 x 2.5 Gbit/s interface	G.957, G.703
up to 4 x 155/622 Mbit/s interface	G.957, G.703
Jitter and wander	G.825
Power consumption	max 25 W

S16LI-8 unit

up to 2 x 2.5 Gbit/s interface	G.957, G.703
up to 8 x 155/622 Mbit/s interface	G.957, G.703
Jitter and wander	G.825
Power consumption	max 28 W

S16LE-2 unit

up to 2 x 2.5 Gbit/s interface	G.957, G.703
up to 4 x 155/622 Mbit/s interface	G.957, G.703
Jitter and wander	G.825

Ethernet interface

4 x1000 BaseT/1000 BaseX (IEEE 802.3)

Power consumption	max 30 W
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STI2-63 tributary unit

63 x E1 interface	G.703 (120/75 Ω)
Jitter and wander	G.823
Mapping/multiplexing	G.707 at paths: VC12/TU-12/TUG-2/TUG-3/VC4/AU-4/AUG/STM-N
Power consumption	max 25 W

Plug-in SFP transceivers

STM-16:	ITU-T G.957
OI.S16A	LC/FPLD 1310 nm/15 km
OI.L16A	LC/FPLD 1310 nm/48 km
OI.S16B	LC/FPLD 1550 nm/15 km
OI.L16B	LC/FPLD 1550 nm/80 km

STM-4:	ITU-T G.957
OI.S4A	LC/FPLD 1310 nm/15 km
OI.L4A	LC/DFBLD 1310 nm/48 km
OI.L4B	LC/DFBLD 1550 nm/80 km
OI.L4B1	LC/DFBLD 1550 nm/120 km

STM-1:	ITU-T G.957
OI.S1A1	LC/FPLD 1310 nm/15 km
OI.S1A	LC/FPLD 1310 nm/40 km
OI.S1B	LC/DFBLD 1550 nm/93 km
OI.S1 electrical	CMI/12.7 dB at 78 MHz

FE:	IEEE 802.3
OI.S1A1	LC/FPLD 1310 nm/15 km
OI.S1A	LC/FPLD 1310 nm/40 km
OI.S1B	LC/DFBLD 1550 nm/93 km

GbE:	IEEE 802.3
OI.GbE-AS	LC/MQW FPLD 1310 nm/10 km
OI.GbE-A	LC/DFBLD 1310 nm/40 km
OI.GbE-ZX	LC/DFBLD 1550 nm/60 km
EI.GbE-RJ45	RJ45/CAT5/CATe/CAT6/100 m

Traffic protection

Line protection	1+1 MSP
Path protection	VC12, VC3, VC4
Subnetwork protection	SNCP

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Next Generation SDH Systems

ODS2G5

SDH/SONET Multiservice Optical Digital Systems

- Next generation SDH Optical Digital Systems for STM-16/4/1, E1, E3, 10/100 BaseTx, 100 BaseFx, 1000 BaseX, 1000 BaseT services
- Add/drop, cross-connect and terminal multiplexer
- Ethernet over SDH, GFP/VCAT/LCAS technologies
- Compact and flexible SDH equipment, easy expandable from small to full capacity, for metro and access network applications
- Network management system SUNCE-M or SNMP based management



TELECOMMUNICATIONS AND ELECTRONICS

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Basic configuration

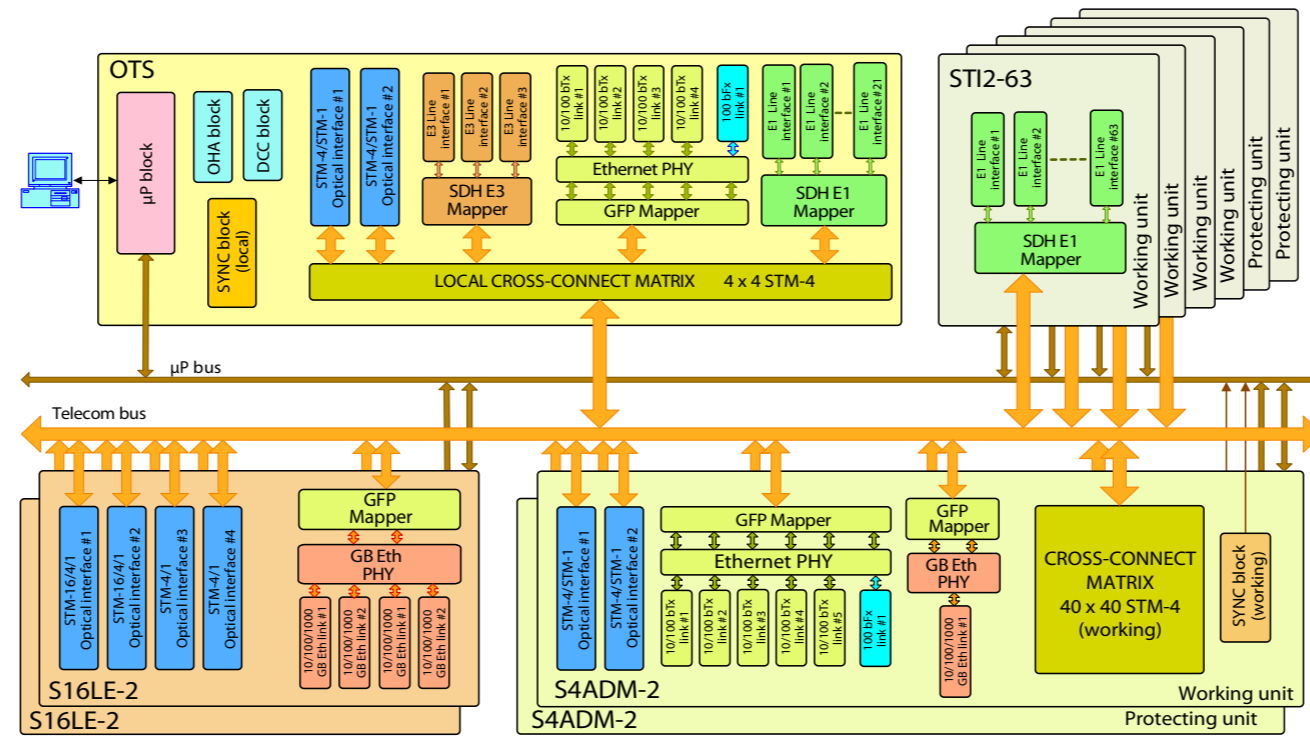
- **ODS2G5C3** configuration for 3 units:
 - up to: 4 x STM-16, 10 x STM-4/1, 21 x 2 Mbit/s, 3 x 34 Mbit/s and 4 x 10/100 BaseTx, 1 x 100 BaseFx, 9 x 1000 BaseT/1000 BaseX
- **ODS2G5C8** configuration for 8 units:
 - up to: 4 x STM-16, 12 x STM-4/1, 273 x 2 Mbit/, 3 x 34 Mbit/s and 13 x 10/100 BaseTx, 2 x 100 BaseFx, 10 x 1000 BaseT/1000 BaseX
- **ODS2G5C12** configuration for 12 units:
 - up to: 6 x STM-16, 18 x STM-4/1, 273 x 2 Mbit/, 3 x 34 Mbit/s and 20 x 10/100 BaseTx, 3 x 100 BaseFx, 15 x 1000 BaseT/1000 BaseX (cross connect card protection, sync module protection, E1 line protection)

Applications

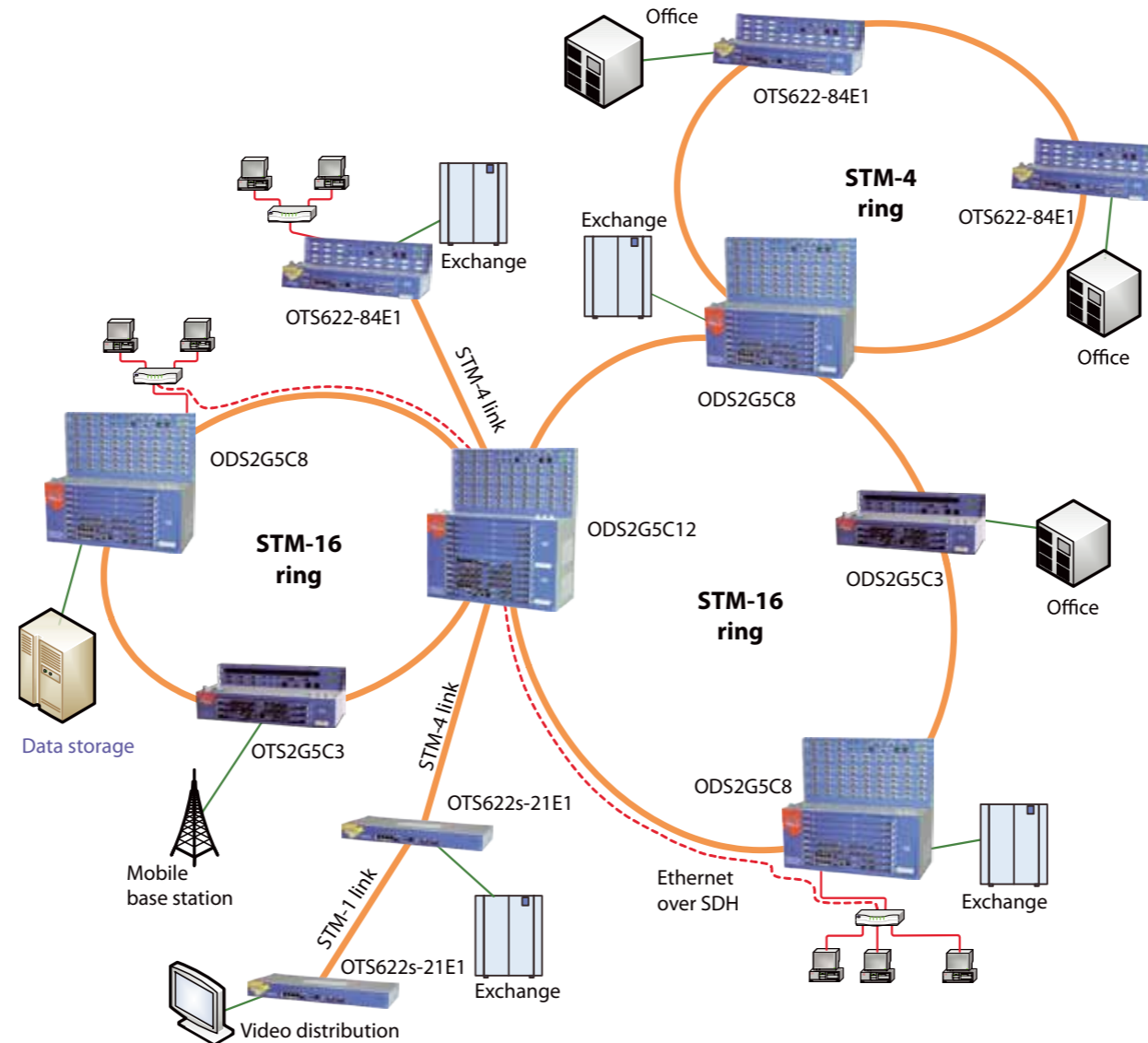
- Point-to-point fibre optic links
- Linear fibre optic networks, providing add-and-drop capability
- All types of fibre rings and complex network structure at STM-16, STM-4 and STM-1 level
- Local cross-connect at VC12 (2 Mbit/s), VC3 (34 Mbit/s) and VC4 levels

Main features

- Multiservice SDH optical digital system for voice and data transmission up to STM-16 (2.5 Gbit/s)
- Optical line interface 2.5 Gbit/s, 622 Mbit/s and 155 Mbit/s provides transmission on single-mode optical fibre at 1310 nm for section length up to 50 km, or at 1550 nm for section length up to 120 km
- Plug-in SFP optical or electrical transceivers, provides STM-16, STM-4 or STM-1 interface configuration on the same unit
- WDM option - two way single fibre transmission (1310 and 1550 nm), passive optical filter
- CWDM option - wavelength division multiplexing (1471, 1491, 1511, 1531, 1551, 1571, 1591, 1611 nm +1310 nm), passive optical filters
- PDH tributary interfaces for 2 Mbit/s and 34 Mbit/s
- Full non blocking cross-connect matrix, capacity 24.88 Gbit/s (160 x 160 VC4) up to VC12 level, S4ADM-2 unit or 44.78 Gbit/s (288 x 288 VC4) up to VC12 level, S16ADM-2 unit
- Ethernet over SDH via GFP/VCAT/LCAS technologies
- Static and dynamic Ethernet traffic capacity adjustment, LCAS procedure



ODS2G5 functional block diagram



ODS2G5 application in complex STM-16 network

- Line protection at multiplex section, 1+1 MSP, higher order path or lower order path protection (VC12, VC3, VC4), sub-network protection SNCP
- Advanced fault diagnosis (integrated BER tester, etc)
- Protection configurations of system (working and reserve modules or units) are possible for cross-connect matrix, synchronization modules, STM-16, STM-4 and STM-1 interfaces and tributary units STI2-63 (1:N 2 Mbit/s tributary protection)
- Unit's configuration parameters are stored in backplane memory, that enable "plug & play" change of units
- SONET option (OC-48/OC-12/OC-3, T1, T3) is software configurable
- ODS2G5 has been designed in compliance with new ITU-T recommendation and ETSI standards

Control and monitoring

- Integrated network management system SUNCE-M provides continuous management of ODS2G5 and all other IRITEL's SDH and PDH equipment (OTS622, ODS155, FM-MSAN, ...)
- The computer (PC) in management operations centre is connected with one network element (ODS2G5) using Ethernet 10/100BaseTx or RS232 interface (F interface)
- Connecting ODS2G5 and other IRITEL's equipment in the same stations on centralized management is realized by Q2 (RS485) or Q2Et (10/100BaseTx) interface
- Interconnection of SDH equipment (ODS2G5) in network is realized through DCC channels (192 kbit/s, 576 kbit/s)
- Additional G.703 / 2 Mbit/s interface is used for connections of several independent subnetwork on one centralized management system SUNCE-M
- SNMP northbound and southbound interfaces
- SNMP MIB
- Control and monitoring using standard SNMP viewer

Power supply

- DC power supply -48 V DC or -60 V DC

Mechanical design

- Unit's dimension: 277 x 175 mm
- Module's dimension
 - ODS2G5C3 (3 units): 150 x 436.6 x 238 mm
 - ODS2G5C8 (8 units): 400 x 436.6 x 238 mm
 - ODS2G5C12 (12 units): 482 x 436.6 x 238 mm
- ETSI or 19" cabinet's dimension: 2200 x 600 x 300 mm