

Programming Schema 188 ONTs - Televes OLT512EVO

Overview

- **OLT Model:** Televes OLT512EVO
- **Total ONTs:** 188
- **Document Created:** September 27, 2025

PON Port Distribution

The OLT512EVO has 8 PON ports, each with a maximum capacity of 128 ONTs.

PON Port	ONT Count	ONT Range	Status
PON 1	24	1-24	Active
PON 2	24	25-48	Active
PON 3	24	49-72	Active
PON 4	24	73-96	Active
PON 5	24	97-120	Active
PON 6	24	121-144	Active
PON 7	24	145-168	Active
PON 8	20	169-188	Active

ONT Configuration Template

Basic ONT Parameters

ONU-ID: [Sequential number 1-188]
Serial Number: [Unique SN per ONT]
Password: [Default or custom]
VLAN: [Per service type]
Bandwidth Profile: [According to subscription]

Service Profiles

Profile 1: Basic Internet (100/10 Mbps)

- **Downstream:** 100 Mbps
- **Upstream:** 10 Mbps
- **VLAN:** 100-199
- **QoS Priority:** 3

Profile 2: Premium Internet (200/20 Mbps)

- **Downstream:** 200 Mbps
- **Upstream:** 20 Mbps
- **VLAN:** 200-299
- **QoS Priority:** 2

Profile 3: Business (500/50 Mbps)

- **Downstream:** 500 Mbps
- **Upstream:** 50 Mbps
- **VLAN:** 300-399
- **QoS Priority:** 1

Detailed ONT List

PON 1 (ONT 1-24)

ONT ID	Serial Number	MAC Address	VLAN	Profile	Location	Status
1	TLVS000000001	-	101	Basic	-	Config
2	TLVS000000002	-	102	Basic	-	Config
3	TLVS000000003	-	103	Basic	-	Config
...	...	...	...	...	...	...
24	TLVS000000024	-	124	Basic	-	Config

PON 2 (ONT 25-48)

ONT ID	Serial Number	MAC Address	VLAN	Profile	Location	Status
25	TLVS000000025	-	125	Premium	-	Config
26	TLVS000000026	-	126	Premium	-	Config
...	...	...	...	...	...	...
48	TLVS000000048	-	148	Premium	-	Config

PON 3-8 (ONT 49-188)

[Similar structure for remaining PON ports]

Configuration Steps

Step 1: OLT Basic Configuration

1. Access OLT via web interface (default IP: 192.168.1.1)
2. Login with admin credentials
3. Configure PON ports

4. Setup basic VLANs
5. Configure bandwidth profiles

Step 2: ONT Auto-Discovery

1. Enable auto-discovery on all PON ports
2. Physically connect ONTs
3. Wait for auto-detection
4. Record detected serial numbers

Step 3: ONT Provisioning

1. Assign ONU-IDs sequentially
2. Configure service profiles
3. Setup VLANs per ONT
4. Test connectivity

Step 4: Service Activation

1. Configure internet access
2. Test bandwidth per ONT
3. Configure QoS settings
4. Document final configuration

CLI Commands (Examples)

PON Port Configuration

```
configure terminal
interface gpon 0/1
description "PON Port 1 - ONT 1-24"
no shutdown
exit
```

Adding ONT

```
interface gpon 0/1
onu 1 type TLVS-ONT serial-number TLVS00000001
exit
interface gpon-onu_0/1:1
description "Customer 001 - Basic Internet"
tcont 1 profile basic_100mb
gemport 1 tcont 1
```

```
service-port 1 vlan 101 gpon-onu_0/1:1 gemport 1
quit
```

Bandwidth Profile

```
dba-profile add profile-name basic_100mb type4 max 100000 min 10000
```

VLAN Configuration

```
vlan 101
name "Basic-Internet-Customer-001"
exit
```

ONT Service Configuration

```
interface gpon-onu_0/1:1
port native-vlan 101
port vlan 101 tagged
bandwidth-profile downstream basic_down upstream basic_up
exit
```

Advanced Configuration

Traffic Management

```
# Configure T-CONT for upstream traffic
tcont 1 profile upstream_basic
tcont 2 profile upstream_premium
tcont 3 profile upstream_business

# Configure GEM Ports for downstream traffic
gemport 1 tcont 1 traffic-descriptor downstream_basic
gemport 2 tcont 2 traffic-descriptor downstream_premium
gemport 3 tcont 3 traffic-descriptor downstream_business
```

Security Settings

```
# Enable MAC address learning limit
interface gpon-onu_0/1:1
mac-address-table learning limit 16
port-security enable
exit
```

Quality of Service

```
# Configure QoS policies
qos-policy basic
  class basic-traffic
    bandwidth percent 30
    priority 3
  exit
exit

qos-policy premium
  class premium-traffic
    bandwidth percent 50
    priority 2
  exit
exit
```

Monitoring and Maintenance

Daily Checks

- ☐ ONT status check via OLT interface
- ☐ Bandwidth utilization monitoring
- ☐ Error rate monitoring
- ☐ Temperature monitoring
- ☐ Optical power level checks

Weekly Tasks

- ☐ Generate performance reports
- ☐ Backup configuration
- ☐ Update firmware if needed
- ☐ Update documentation
- ☐ Review alarm logs

Monthly Tasks

- ☐ Comprehensive network analysis
- ☐ Capacity planning review
- ☐ Security audit
- ☐ Performance optimization

Monitoring Commands

ONT Status Check

```
show gpon onu state gpon-onu_0/1:1  
show gpon onu detail gpon-onu_0/1:1  
show interface gpon-onu_0/1:1
```

Performance Monitoring

```
show gpon onu statistics gpon-onu_0/1:1  
show interface gpon-onu_0/1:1 counters  
show qos interface gpon-onu_0/1:1
```

Optical Power Monitoring

```
show gpon onu optical-info gpon-onu_0/1:1  
show interface gpon 0/1 optical-module
```

Troubleshooting

Common Issues

Issue 1: ONT Not Detected

Symptoms: ONT not appearing in discovered devices **Solutions:**

- Check fiber connection integrity
- Verify ONT power supply
- Check PON port status
- Verify optical power levels (-8dBm to -28dBm)

Issue 2: Low Speeds

Symptoms: Bandwidth below configured profile **Solutions:**

- Check for fiber bending/macro bending
- Verify optical power levels
- Check for network congestion
- Review QoS configuration

Issue 3: Intermittent Connection

Symptoms: ONT frequently goes offline **Solutions:**

- Check power supply stability
- Inspect fiber connections
- Monitor temperature levels
- Update ONT firmware

Issue 4: VLAN Issues

Symptoms: No internet access despite ONT being online **Solutions:**

- Verify VLAN configuration
- Check trunk port settings
- Validate service port mapping
- Test Layer 2 connectivity

Diagnostic Commands

```
# Check ONT registration status
show gpon onu state

# Check optical power levels
show gpon onu optical-info

# Check error counters
show interface gpon-onu counters

# Check VLAN configuration
show vlan
show service-port
```

Backup and Recovery

Configuration Backup

```
# Create backup of current configuration
backup configuration filename "ont_config_20250927.cfg"

# Schedule automatic backups
schedule backup daily time 02:00
```

Recovery Procedures

1. **Individual ONT Recovery:** Re-provision using stored serial numbers
2. **Bulk Recovery:** Use configuration templates and batch commands

3. Full System Recovery: Restore from backup configuration file

Documentation Requirements

Mandatory Records

- ONT serial numbers and MAC addresses
- Customer assignment per ONT
- Service profile assignments
- VLAN mappings
- Physical location mapping
- Installation dates
- Maintenance history

Report Templates

- Daily operational status
- Weekly performance summary
- Monthly capacity utilization
- Quarterly network analysis

Contact Information

- **Technical Support:** [Phone Number]
- **Televes Support:** [Support Details]
- **Emergency Contact:** [24/7 Number]
- **Network Operations Center:** [NOC Details]

Appendix

Default Passwords

- **OLT Admin:** [Default/Custom]
- **ONT Management:** [Default/Custom]

IP Addressing Plan

- **OLT Management:** 192.168.1.1/24
- **ONT Management:** 192.168.100.1-188/24
- **Customer Gateway:** 192.168.x.1/24 (per customer)

Firmware Versions

- OLT Firmware: [Version]
- ONT Firmware: [Version]
- Last Updated: [Date]

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