ETU-LINK®

Optical Communication System

PON Series

GPON

EGP4321-3SCDC2x

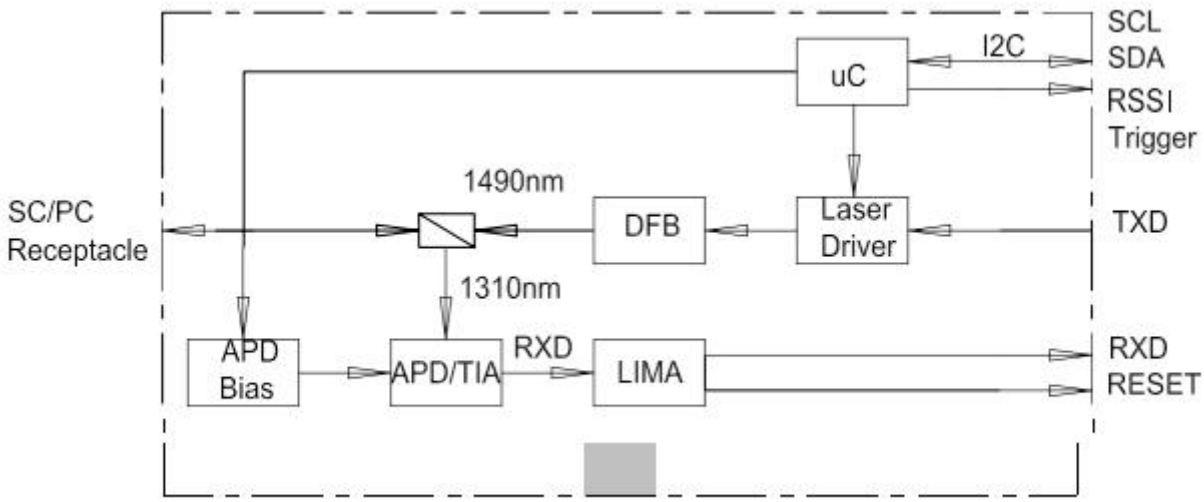
GPON OLT Class C++ SFP Transceiver

- SFP with SC/PC Connector Transceiver
- 1490 nm DFB Tx with isolator
- 1310 nm APD Rx
- Digital diagnostics SFF-8472 Compliant
- 2488 Mbps continuous mode Transmission
- 1244 Mbps Burst mode receiver Data Rate
- RX Fast Burst Mode Detection
- Provide fast RSSI function
- Operation case temperature: 0~70°C
- Class C++ link budget
- Comply with ITU-T G984.2 Amendment 1
- Complies with RoHS directive (2002/95/EC)

Application

- GPON OLT Class C++
- FTTx

Function Diagram



Recommended Operating Conditions

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	T_{STG}	-40	85	°C
Operating Case Temperature	T_C	0	70	°C
Power Supply Voltage	V_{CC}	3.1	3.5	V
Total Power Supply Current	Icc	-	500	mA

Transmitter Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
Optical Transmitter Power	P0	+7.0	-	+10	dBm	
Optical Transmitter Power off	POFF	-	-	-39	dBm	
Output Center Wavelength	λ	1480	-	1500	nm	
Output Spectrum Width	Δλ	-	-	1.0	nm	
Side Mode Suppression Ratio	SMSR	30	-	-	dB	
Extinction Ratio	ER	8.2	-	-	dB	1
Optical Rise Time	-	-	-	160	ps	

Optical Fall Time	-	-	-	160	ps	
Optical Eye Diagram	Compliant with ITU-T G.984.2 Mask					
Tolerence to Tx Back Reflection	-	-15	-	-	dB	
Data Rate	-	-	2.488	-	Gb/s	
Differential Input Voltage	VPP	300	-	1200	mV	
Differential Input Impedance	ZIN	80	100	120	ohm	
Tx_fault Output Voltage- High	VIH	2.4	-	-	V	
Tx_fault Output Voltage- Low	VIL	-	-	0.4	V	
Tx_Dis Input Voltage- High	VIH	2.0	-	-	V	
Tx_Dis Input Voltage- Low	VIL	-	-	0.8	V	

Note 1: 2.488Gbps continuous-mode , PRBS2^{23}-1.

Receiver Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
Wavelength of Operation	-	1260	-	1360	nm	-
Data Rate	-	-	1.244	-	Gb/s	-
Sensitivity	Sen	-	-	-30	dBm	1
Saturation Optical Power	Sat	-12	-	-	dBm	1
Receiver Reflectance	-	-	-	-12	dB	
Receiver Burst-mode Dynamic Range	-	15	-	-	dB	2
Data Output Voltage - High	VOH	VccR -1.05	-	VccR -0.85	V	-
Data Output Voltage - Low	VOL	VccR -1.84	-	VccR -1.60	V	-
Data Output Differential Swing	-	400	-	1600	mV	
RSSI accuracy	-	-3	-	3	dB	3
BPD Output Voltage- High	VIH	2.4	-	-	V	4
BPD Output Voltage- Low	VIL	-	-	0.4	V	4
Guard Time	T_{GUARD}	-	32	-	bits	-
Rest Width	T_{RESET}		16	-	bits	
Optical Signal During Time	$T_{ONT\ EN\_DUR}$	300	-	-	ns	5
RSSI Trigger Delay	T_D	0	-	3000	Ns	6
RSSI Trigger Width	T_W	300	-	$T_{ONT\ EN\_DUR}$	ns	

Note 1: Measured with 1310nm, 1.244Gbps PRBS2^{23}-1 burst-mode optical input, ER=10dB, BER=1x10^{-10}; Single burst packet length is 40us and packet interval is 40us.

Note 2: Input optical power level difference of adjacent burst packets.

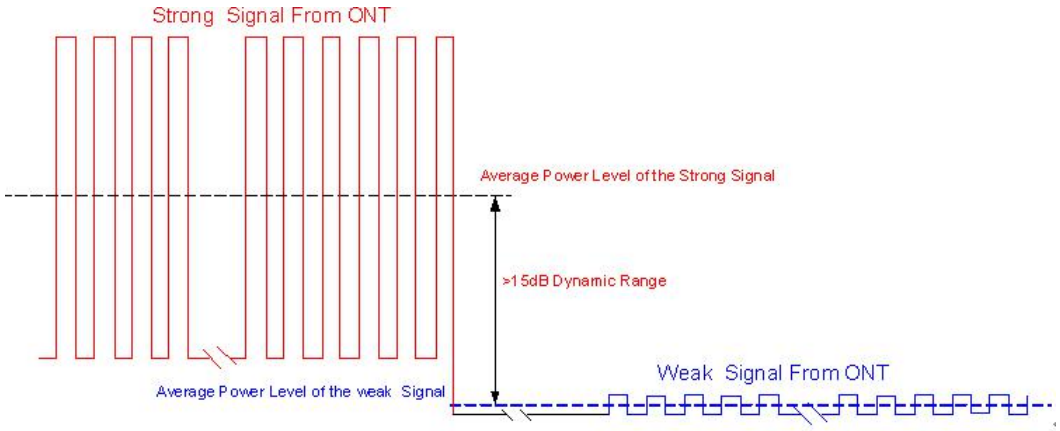
Note 3: Receiver optical power ranged from -8dBm to -28dBm, measured with 1310nm, 1.244Gbps PRBS2^7-1 burst-mode optical input, ER=10dB, 50%duty cycle.

Note 4: BPD assert low when module receive “Reset” signal, assert high when burst package is detected and latch to high state until next “Reset” signal.

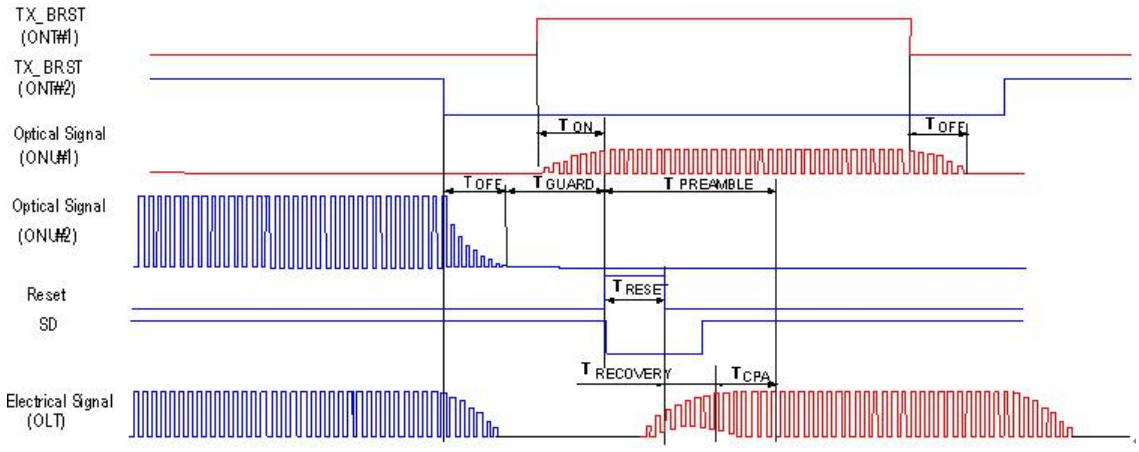
Note 5: For RSSI Measurement

Note 6: Refer to first bit of the preamble

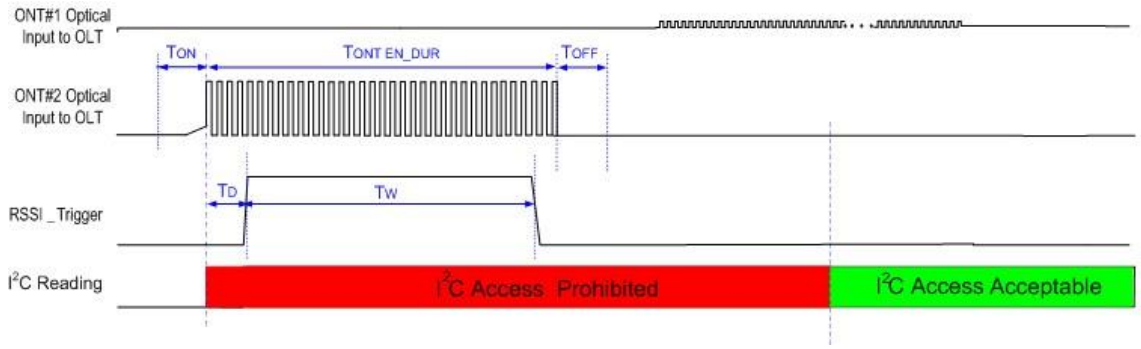
Burst Mode Receiver Dynamic Range



Timing Parameter Definitions in Burst Mode Sequence



RSSI Timing Sequence



Digital Diagnostic Monitoring Accuracy

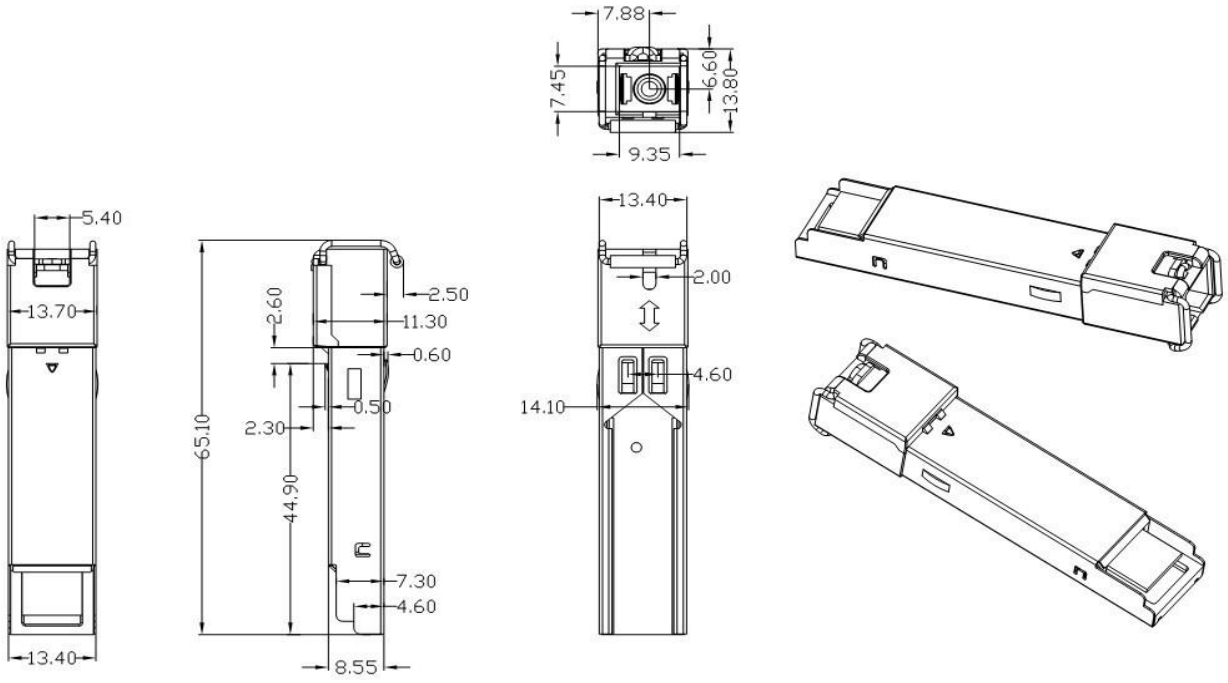
Parameter	Accuracy	Units	Notes
Transceiver Temperature	±3	°C	Temperature sensor
Power Supply Voltage	±3	%	Vcc=3.13~3.47V
TX Bias Current	±10	mA	
TX Optical Power	±3	dB	Average Power
Rx Power	±3	dB	

Pin Definitions

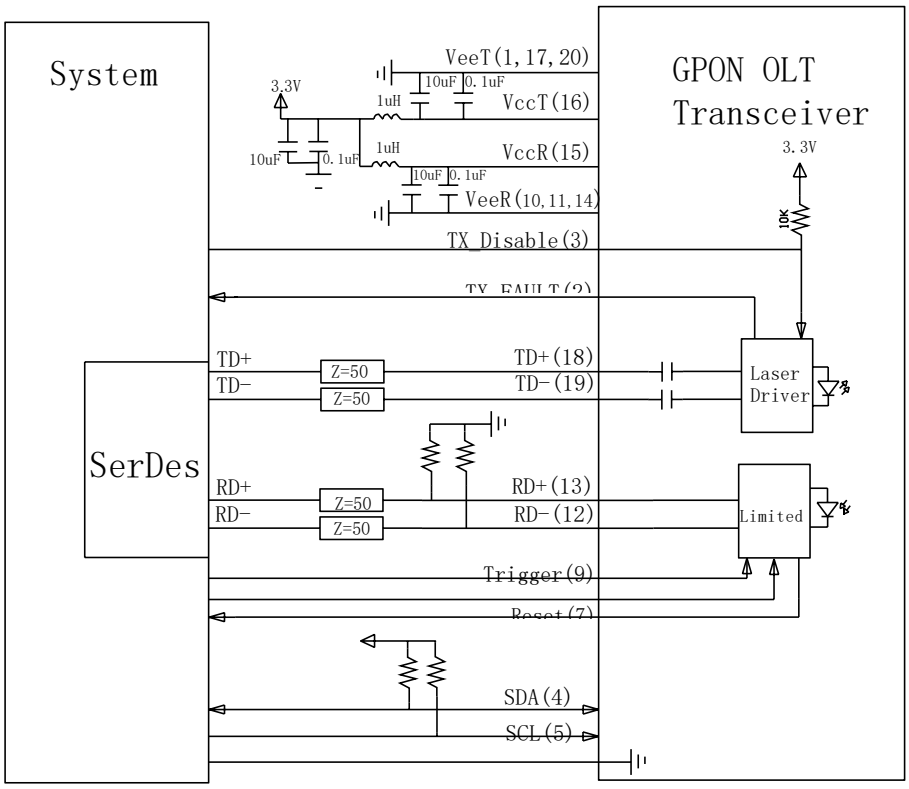
Pin#	Name	Function
1	VeeT	Transmitter Ground
2	TX_Fault	Transmitter Fault Indication, LVTTL Output, Active High
3	TX_Disable	Transmitter Disable, LVTTL Input. Optical output power is off when this PIN is high or left unconnected.
4	SDA	I2C Data
5	SCL	I2C Clock
6	MOD-DEF(0)	Internally grounded
7	Reset	Receiver Reset , LVTTL Input. Set “Reset” high at the end of previous burst, 2 bytes in duration

8	BPD	Burst Packet Detect, LVTTL output. BPD assert low when module receives “reset” signal, assert high when incoming burst is present.
9	RSSI_Trigger	RSSI Trigger Signal from Host, LVTTL input.
10	VeeR	Receiver Ground
11	VeeR	Receiver Ground
12	RD-	Inv. Received Data Out, LVPECL,DC coupled
13	RD+	Received Data Out, LVPECL,DC coupled
14	VeeR	Receiver Ground
15	VccR	Receiver Power
16	VccT	Transmitter Power
17	VeeT	Transmitter Ground
18	TD+	Transmit Data In, LVPECL or CML (AC coupled; internally 100 ohms differential termination)
19	TD-	Inv. Transmit Data In, LVPECL or CML (AC coupled; internally 100 ohms differential termination)
20	VeeT	Transmitter Ground

Outline Drawing



Recommended Application Circuit



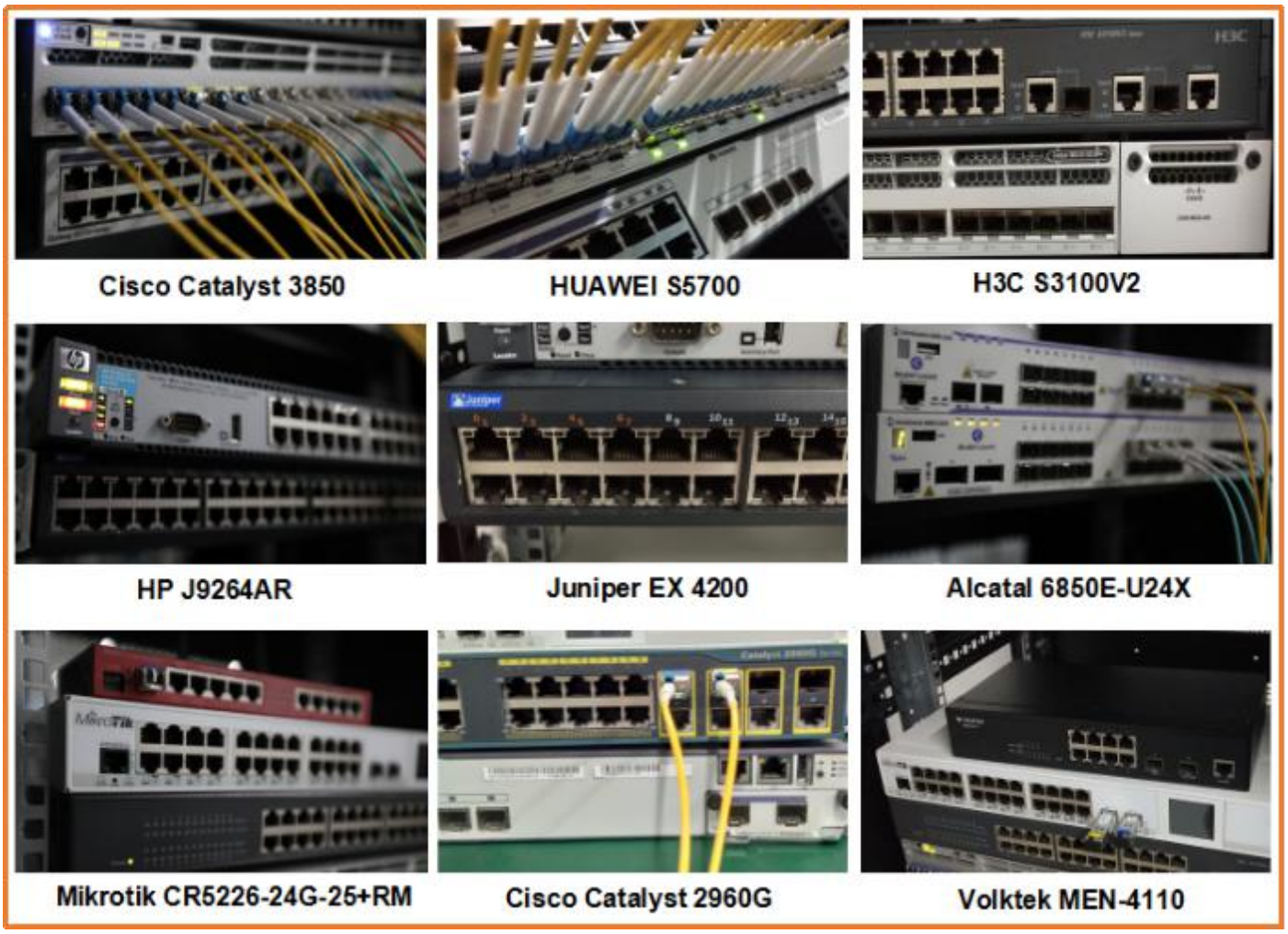
Order Information

Part Number	Product description	RoHS Compliant
EGP4321-3SCDC2x	SFP GPON OLT/Tx1490nm/Rx1310nm/20km/Tx2.5Gbps/Rx1.25Gbps/G984.2 Class C++/ 0~70°C/SC receptacle	RoHS-6

Compatibility Test

In order to ensure the product compatibility, our products will be tested on the switch before shipment. Our modules can compatible with many mainstream brand switches, such as Cisco, Juniper, Extreme, Brocade, IBM, H3C, HP, Huawei, D-Link, Mikrotik, ZTE, TP-Link...

Our test equipment: VOLKTEK MEN-4110, HP 2530-8G, CRS226-24G-25+RM, Catalyst 2960G Series, Catalyst 3850 XS 10G SFP+, Catalyst 3750-E Series, HUAWEI S5700Series, H3C S3100V2 Series, Juniper-EX4200, etc.



Cisco Catalyst 3850 | HUAWEI S5700 | H3C S3100V2

HP J9264AR | Juniper EX 4200 | Alcatal 6850E-U24X

Mikrotik CR5226-24G-25+RM | Cisco Catalyst 2960G | Volktek MEN-4110

Product Production Process

Quality Assurance

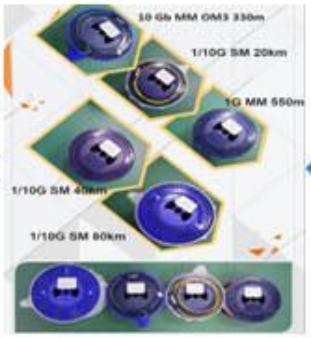
Continuous introduction of new equipment, produced by strict standards, strict quality inspection, to guarantee the high quality standard of each product.

Standardized Production Line

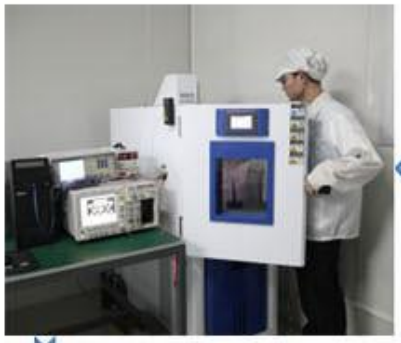
Professional Welding

Assembling

Cleaning end face



Distance Testing



Aging Testing

Product Initial Test

Switch Testing

Product Final Test

Packaging

ETU-Link provides two kinds of packaging, 10pcs/Tray and individual package.

Company: ETU-Link Technology Co., LTD
Address: Right side of 3rd floor, No. 102 building, Longguan expressway, Dalang street, Longhua District, Shenzhen city, GuangDongProvince,China 518109
Tel: +86-755 2328 4603

Addresses and phone number also have been listed at www.etulinktechnology.com.
Please e-mail us at sales@etulinktechnology.com or call us for assistance.