

Enquiry No: R211E0025

Date: 07/ 05/ 2021

Due Date: 14/ 05/ 2021

ITI LIMITED,R&D Purchase,
Bangalore Plant,
Dooravani Nagar,
BANGALORE,-560 016
Phone : 080-28503675
Fax: 080-25650971
Email : mmr_bgp@itilttd.co.in

Originators : R & D, I.T.I LIMITED,DOORVANINAGAR

Dear Sir,

Please quote your prices and delivery for the following items as per the terms and Conditions given.

Item No.	Description of Material	Qty. Reqd.	Instructions for submission of tenders
1.	DC DC CONVERTER P/N: MGFS102412	20 Nos.	1. Quotation must be submitted in duplicate, superscribed with our tender number & due date and should reach us well before DUE DATE.Open and/or late tenders and tenders without enquiry nos. are liable for rejection. 2. All offers should be complete with specification and catalogue and samples where specified. 3. Validity : Quotation should be valid for a period of 90 days from the due date of tender.
2.	Low Dropout Linear Voltage Regulator P/N: LM1117IMP-5.0/NOPB	30 Nos.	
3.	Low Dropout Voltage References P/N: REF195GS	25 Nos.	
4.	DUAL CHANNEL DAC 16 BIT P/N: LTC2602IMS8	30 Nos.	
5.	Quad-Channel Digital Isolator P/N: ADUM1410ARWZ-RL	20 Nos.	
6.	MICROPOWER PRECISION REF IC P/N: REF193GSZ	30 Nos.	

7.	LED DRIVE CONTROL P/N: TM1638	30 Nos.	Prices must remain firm till completion of order. 4. Payment: Bills will be paid within 45 days from receipt of materials. 5. Failure to adhere to any of the above, will disqualify the offer.
8.	PRIORITY ENCODED ALARM SYSTEM P/N: ALC109	15 Nos.	
9.	Linear Voltage Regulator TO-223-3 PKG P/N: LM338T	30 Nos.	
10.	LDO VOLTAGE REGULATOR 3.3 V P/N: XC6206P332MR-G	30 Nos.	
11.	8 BIT MICROCONTROLLER 32 KB P/N: ATMEGA328	25 Nos.	
12.	Linear Voltage Regulators Adjustable TO-220 Pkg P/N: LM317BTG	30 Nos.	
	(SPECIFICATIONS ENCLOSED)		

PL. QUOTE FOR REQUIRED QTY. ONLY.

Delivery Required : 31/05/2021

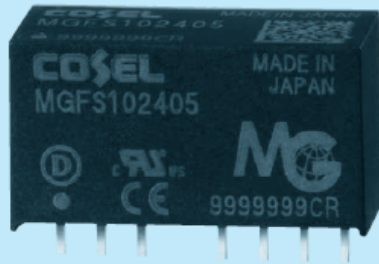
Yours Faithfully,
For I T I Limited

M.DIWAKAR BHAT,
Materials Manager(R)
R & D Purchase

Note: For the technical specifications, compliance statement should be provided for all points mentioned. The compliance has to be indicated individually point wise against each Sl. No. of the specifications listed. If the compliance statement is not provided the offer is liable to be rejected.

MGFS10

MGF S 10 24 05 -



- ① Series name
 - ② Single output
 - ③ Output wattage
 - ④ Input voltage
 - ⑤ Output voltage
 - ⑥ Optional
- Y2: Output voltage adjustable (+10%, -5%)

MODEL	MGFS10243R3	MGFS102405	MGFS102412	MGFS102415
MAX OUTPUT WATTAGE[W]	8.58	10.0	10.8	10.5
DC OUTPUT	VOLTAGE[V]	3.3	5	12
	CURRENT[A]	2.6	2.0	0.9

SPECIFICATIONS

	MODEL	MGFS10243R3	MGFS102405	MGFS102412	MGFS102415	
INPUT	VOLTAGE[V]	DC9 - 36 (Surge voltage 50V,100ms max) (Refer to "Derating" for input voltage derating.)				
	CURRENT[A]	*1 0.42typ	0.48typ	0.51typ	0.50typ	
	EFFICIENCY[%]	*1 86typ	88typ	89typ	89typ	
OUTPUT	VOLTAGE[V]	3.3	5	12	15	
	CURRENT[A]	2.6	2.0	0.9	0.7	
	LINE REGULATION[mV]	20max	20max	48max	60max	
	LOAD REGULATION[mV]	20max	20max	48max	60max	
	RIPPLE[mVp-p]	Io=30% -	75max	75max	100max	100max
		Io=0 - 30%	225max	225max	300max	300max
	RIPPLE NOISE[mVp-p]	Io=30% -	120max	120max	150max	150max
		Io=0 - 30%	300max	300max	400max	400max
	TEMPERATURE REGULATION[mV]	-20 to +55°C	50max	50max	150max	180max
	DRIFT[mV]	-40 to +55°C	80max	80max	240max	290max
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION	Works over 105% of rating and recovers automatically				
	REMOTE ON/OFF	Provided (Negative logic L : ON, H : OFF)				
	START-UP TIME[ms]	30max (Minimum input, Io=100%)				
OUTPUT VOLTAGE SETTING[V]	3.21 - 3.42	4.90 - 5.21	11.64 - 12.36	14.55 - 15.45		



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PACKAGE OPTION ADDENDUM

11-Jan-2021

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead finish/ Ball material (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
LM1117IMP-3.3/NOPB	ACTIVE	SOT-223	DCY	4	1000	RoHS & Green	SN	Level-1-260C-UNLIM	-40 to 125	N05B	Samples
LM1117IMP-5.0/NOPB	ACTIVE	SOT-223	DCY	4	1000	RoHS & Green	SN	Level-1-260C-UNLIM	-40 to 125	N06B	Samples

Model ¹	Temperature Range	Package Description	Package Option	Ordering Quantity
REF195GS	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	
REF195GS-REEL	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	2,500
REF195GS-REEL7	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	1,000
REF195GSZ	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	
REF195GSZ-REEL	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	2,500
REF195GSZ-REEL7	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	1,000
REF196GRUZ-REEL7	-40°C to +85°C	8-Lead TSSOP	RU-8	1,000
REF196GSZ	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	
REF196GSZ-REEL	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	2,500
REF196GSZ-REEL7	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	1,000
REF198ES	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	
REF198ES-REEL	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	2,500
REF198ESZ	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	
REF198ESZ-REEL	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	2,500
REF198ESZ-REEL7	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	1,000
REF198FS-REEL	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	2,500
REF198FSZ	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	
REF198FSZ-REEL	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	2,500
REF198GRUZ	-40°C to +85°C	8-Lead TSSOP	RU-8	
REF198GRUZ-REEL7	-40°C to +85°C	8-Lead TSSOP	RU-8	2,500
REF198GS	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	
REF198GS-REEL	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	2,500
REF198GSZ	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	
REF198GSZ-REEL	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	2,500

¹ Z = RoHS Compliant Part.

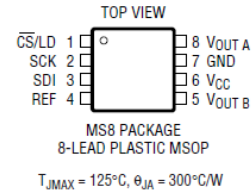
LTC2602/LTC2612/LTC2622

ABSOLUTE MAXIMUM RATINGS

(Note 1)

Any Pin to GND	-0.3V to 6V
Any Pin to V_{CC}	-6V to 0.3V
Maximum Junction Temperature	125°C
Operating Temperature Range	
LTC2602C/LTC2612C/LTC2622C	0°C to 70°C
LTC2602I/LTC2612I/LTC2622I	-40°C to 85°C
Storage Temperature Range	-65°C to 150°C
Lead Temperature (Soldering, 10 sec)	300°C

PACKAGE/ORDER INFORMATION



ORDER PART NUMBER	MS8 PART MARKING
LTC2602CMS8	LTACX
LTC2602IMS8	LTACY
LTC2612CMS8	LTACZ
LTC2612IMS8	LTADA
LTC2622CMS8	LTADB
LTC2622IMS8	LTADC

Order Options Tape and Reel: Add #TR
Lead Free: Add #PBF Lead Free Tape and Reel: Add #TRPBF
Lead Free Part Marking: <http://www.linear.com/leadfree/>

Consult LTC Marketing for parts specified with wider operating temperature ranges.

ORDERING GUIDE

Model ¹	Number of Inputs, V_{DD1} Side	Number of Inputs, V_{DD2} Side	Maximum Data Rate	Maximum Propagation Delay, 5 V	Maximum Pulse Width Distortion	Temperature Range	Package Description	Package Option
ADuM1410ARWZ	4	0	1 Mbps	100 ns	40 ns	-40°C to +105°C	16-Lead SOIC_W	RW-16
ADuM1410ARWZ-RL	4	0	1 Mbps	100 ns	40 ns	-40°C to +105°C	16-Lead SOIC_W, 13" Tape and Reel	RW-16
ADuM1410BRWZ	4	0	10 Mbps	50 ns	5 ns	-40°C to +105°C	16-Lead SOIC_W	RW-16
ADuM1410BRWZ-RL	4	0	10 Mbps	50 ns	5 ns	-40°C to +105°C	16-Lead SOIC_W, 13" Tape and Reel	RW-16
ADuM1411ARWZ	3	1	1 Mbps	100 ns	40 ns	-40°C to +105°C	16-Lead SOIC_W	RW-16
ADuM1411ARWZ-RL	3	1	1 Mbps	100 ns	40 ns	-40°C to +105°C	16-Lead SOIC_W, 13" Tape and Reel	RW-16
ADuM1411BRWZ	3	1	10 Mbps	50 ns	5 ns	-40°C to +105°C	16-Lead SOIC_W	RW-16
ADuM1411BRWZ-RL	3	1	10 Mbps	50 ns	5 ns	-40°C to +105°C	16-Lead SOIC_W, 13" Tape and Reel	RW-16
ADuM1412ARWZ	2	2	1 Mbps	100 ns	40 ns	-40°C to +105°C	16-Lead SOIC_W	RW-16
ADuM1412ARWZ-RL	2	2	1 Mbps	100 ns	40 ns	-40°C to +105°C	16-Lead SOIC_W, 13" Tape and Reel	RW-16
ADuM1412BRWZ	2	2	10 Mbps	50 ns	5 ns	-40°C to +105°C	16-Lead SOIC_W	RW-16
ADuM1412BRWZ-RL	2	2	10 Mbps	50 ns	5 ns	-40°C to +105°C	16-Lead SOIC_W, 13" Tape and Reel	RW-16

¹ Z = RoHS Compliant Part.

ORDERING GUIDE

Model ¹	Temperature Range	Package Description	Package Option	Ordering Quantity
REF191ES	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	
REF191ES-REEL	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	2,500
REF191ESZ	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	
REF191ESZ-REEL	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	2,500
REF191GS	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	
REF191GS-REEL	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	2,500
REF191GSZ	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	
REF191GSZ-REEL	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	2,500
REF192ES	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	
REF192ES-REEL	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	2,500
REF192ES-REEL7	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	1,000
REF192ESZ	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	
REF192ESZ-REEL	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	2,500
REF192ESZ-REEL7	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	1,000
REF192FS	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	
REF192FS-REEL	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	2,500
REF192FS-REEL7	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	1,000
REF192FSZ	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	
REF192FSZ-REEL	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	2,500
REF192FSZ-REEL7	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	1,000
REF192GPZ	-40°C to +85°C	8-Lead PDIP	P-Suffix (N-8)	
REF192GRUZ	-40°C to +85°C	8-Lead TSSOP	RU-8	
REF192GRUZ-REEL7	-40°C to +85°C	8-Lead TSSOP	RU-8	1,000
REF192GS	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	
REF192GS-REEL	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	2,500
REF192GS-REEL7	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	1,000
REF192GSZ	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	
REF192GSZ-REEL	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	2,500
REF192GSZ-REEL7	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	1,000
REF193GSZ	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	
REF193GSZ-REEL	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	2,500
REF194ES	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	
REF194ESZ	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	
REF194ESZ-REEL	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	2,500
REF194GS-REEL	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	2,500
REF194GS-REEL7	-40°C to +85°C	8-Lead SOIC_N	S-Suffix (R-8)	1,000

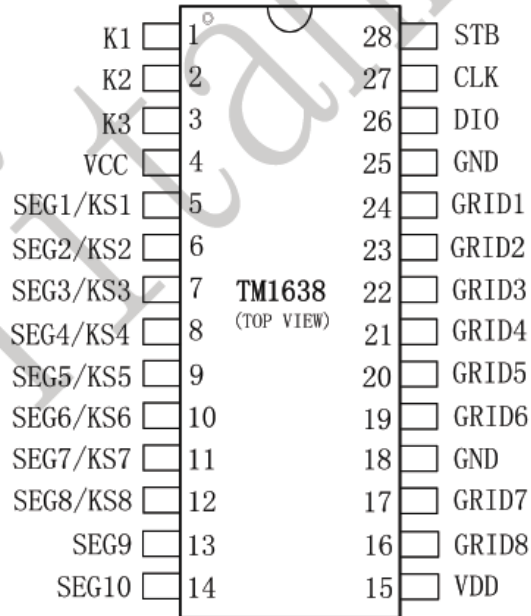
I. Introduction

TM1638 is an IC dedicated to LED (light emitting diode display) drive control and equipped with a keypad scan interface. It integrates MCU digital interface, data latch, LED drive, and keypad scanning circuit. This product is reliable in quality, stable in performance and strong in interference resistance. It is mainly used for household electrical appliances (smart water heaters, microwave ovens, washing machines, air conditioners, electric stove), set-top boxes, electronic scale, smart meters and other digital tube or LED display devices.

II. Features

- CMOS technology
- 10 segments × 8 bits display
- Keypad scanning (8 × 3 bits)
- Brightness adjustment circuit (8-level adjustable duty ratio)
- Serial interfaces (CLK, STB, DIO)
- Oscillation mode: RC oscillation
- Built-in power-on reset circuit
- Package type: SOP28

III. Pin definition:



3. Ordering information

Type number	Package	Description	Version	Packing information
ALC109	28-pin DIPMP	Hybrid carrier, 18 leads	1.9	25 pcs.

1
Product data sheet ALC109

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PACKAGE OPTION ADDENDUM

11-Jan-2021

PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead finish/ Ball material (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
LM138K STEEL	ACTIVE	TO-3	NDS	2	50	Non-RoHS & Non-Green	Call TI	Call TI	-55 to 125	LM138K STEELP+	Samples
LM138K STEEL/NOPB	ACTIVE	TO-3	NDS	2	50	RoHS & Green	Call TI	Level-1-NA-UNLIM	-55 to 125	LM138K STEELP+	Samples
LM338T	NRND	TO-220	NDE	3	45	Non-RoHS & Green	Call TI	Call TI	0 to 125	LM338T P+	
LM338T/NOPB	ACTIVE	TO-220	NDE	3	45	RoHS & Green	SN	Level-1-NA-UNLIM	0 to 125	LM338T P+	Samples

■ PRODUCT CLASSIFICATION

● Ordering Information

XC6206P①②③④⑤-⑥⁽¹⁾

DESIGNATOR	ITEM	SYMBOL	DESCRIPTION
①②	Output Voltage	12~50	e.g. V _{OUT} : 3.0V→①=3, ②=0
③	Accuracy	2	±2% (V _{OUT} ≥ 1.5V), ±30mV (V _{OUT} <1.5V)
		1	±1% (V _{OUT} ≥ 2.0V)
④⑤-⑥	Packages (Order Unit)	MR	SOT-23 (3,000pcs/Reel)
		MR-G	SOT-23 (3,000pcs/Reel)
		PR	SOT-89 (1,000pcs/Reel)
		PR-G	SOT-89 (1,000pcs/Reel)
		DR	USP-6B (3,000pcs/Reel)
		DR-G	USP-6B (3,000pcs/Reel)

⁽¹⁾ The "-G" suffix denotes Halogen and Antimony free as well as being fully EU RoHS compliant.

ATmega48A/PA/88A/PA/168A/PA/328/P

38.8 ATmega328P

Speed (MHz) ⁽³⁾	Power Supply (V)	Ordering Code ⁽²⁾	Package ⁽¹⁾	Operational Range
20	1.8 - 5.5	ATmega328P-AU	32A	Industrial (-40°C to 85°C)
		ATmega328P-AUR ⁽⁵⁾	32A	
ATmega328P-MMH ⁽⁴⁾	28M1			
ATmega328P-MMHR ⁽⁴⁾⁽⁵⁾	28M1			
ATmega328P-MU	32M1-A			
ATmega328P-MUR ⁽⁵⁾	32M1-A			
ATmega328P-PU	28P3	Industrial (-40°C to 105°C)		
ATmega328P-AN	32A			
ATmega328P-ANR ⁽⁵⁾	32A			
ATmega328P-MN	32M1-A			
ATmega328P-MNR ⁽⁵⁾	32M1-A			
ATmega328P-PN	28P3			

- Note:
- This device can also be supplied in wafer form. Contact your local Microchip sales office for detailed ordering information and minimum quantities.
 - Pb-free packaging complies to the European Directive for Restriction of Hazardous Substances (RoHS directive). Also Halide free and fully Green.
 - See [Figure 29-1 on page 312](#).
 - NiPdAu Lead Finish.
 - Tape & Reel.

LM317, NCV317

ORDERING INFORMATION

Device	Operating Temperature Range	Package	Shipping†
LM317BD2TG	T _J = -40° to +125°C	D ² PAK-3 (Pb-Free)	50 Units / Rail
LM317BD2TR4G		D ² PAK-3 (Pb-Free)	800 Tape & Reel
LM317BTG		TO-220 (Pb-Free)	50 Units / Rail

TERMS AND CONDITIONS FOR SUBMISSION OF TENDER

1. Inspection: Inspection of goods at our works is final. Goods rejected will be returned on freight to pay basis. Packing & forwarding charges in respect of such consignment will be debited to your account.
2. We reserve the right to accept or reject any or all offers and part or full quantity, without assigning any reason.
3. Please specify your income Tax Account Number and name of I.T. Circle.
4. The quote must be for the quantity specified in the enquiry and should also indicate slab rates for multiples of the quantity enquired.
5. Components to be supplied shall be from the latest batch of production. If terms are offered from stocks the lot/batch code shall not be earlier than 2 years from the date of shipment.
6. Liquidated Damages and risk purchase clauses: Time is the essence of contract and the materials against the order arising out of this enquiry must be delivered by the supplier according to the delivery schedule indicated in the purchase order. In case of any change, the supplier should inform us in advance and obtain our approval to the revised delivery schedule. Should the supplier fail to deliver the material in full or part thereof, we shall be entitled at our option either to recover from the supplier as agreed the liquidated damages and not as penalty, a sum equivalent to half percent of the contract price of the item per week for first four weeks and 0.7% per week thereafter for such delay or part thereof or to terminate the contract in respect of the balance supply so delayed and purchase material elsewhere at the risk of the supplier.
7. FOR INDIGENEOUS OFFERS ONLY:
 - (a) PRICES should always be quoted on F.O.R KRISHNARAJPURAM basis including suitable packing.
 - (b) Specify applicable statutory levies, e.g. Central excise duty, sales tax, etc. In absence of these, the prices shall be treated as inclusive of all such levies & no subsequent claims will be entertained.
8. FOR FOREIGN OFFERS ONLY.
 - (a) Prices must be quoted on F.O.B. Port of dispatch or airport and indicate estimated charges for dispatch by AIR FREIGHT/AIR POST PARCEL to BANGALORE.
 - (b) Prices quoted must include Agency Commission (if any) to your Indian Agents. The same must be specified, which is payable to them in Indian Rupees.

(c) Payment: Letter of credit or sight draft through the STATE BANK OF INDIA, BANGALORE- 560 016, as detailed below:
“ITI” will bear only LC establishment charges once & bank charges of State Bank of India. All foreign bank’s charges (i.e. charges while negotiating documents when the same are sent on the collection basis due to certain discrepancies in the presentation of documents (LCBCs etc.) are to be borne by Foreign Suppliers. In case of order placed on sight draft basis (FLCSAs) also, the invoice amount will be paid & all the foreign bank’s charges are to the supplier’s account.

Please furnish your Banker’s name and address for this purpose.