ELLC Interface Board, and ELLC1 and ELLC2 Accessory Upgrade Kits

User Guide



Table of Contents

Chapter 1 Introduction 1
1.1 Intended Use 1
1.2 Explanation of Safety Warnings 2
1.3 Description 2
1.4 Technical Data 3
1.4.1 Specifications 3
1.4.2 Mechanical Drawings 4
1.5 Pin Diagrams 5
1.6 Components 6
1.6.1 ELLC Interface Board 6
1.6.2 Picoflex® Cable 7
1.6.3 USB Cable 7
1.6.4 Power Supply (Item # ELLC2 only) 8
1.7 Simplified Declaration of Conformity 9
1.8 FCC Designation 9
Chapter 2 Safety 10
2.1 Exposure 10
Chapter 3 Disposal 11
Chapter 4 Thorlabs Worldwide Contacts 12

Chapter 1 Introduction

1.1 Intended Use

The ELLC1 and ELLC2 Accessory Upgrade Kits are variants of Elliptec's range of components used to convert any single ELL slider, mount, or stage to an ELL kit.

The ELLC Interface Board and both ELLC1 and ELLC2 variants of Elliptec's range of components are compatible with the ELL Series devices listed below:

Single	Kit
ELL6B	NA
ELL9	ELL9K
ELL12	ELL12K
ELL14	ELL14K
ELL15	ELL15K
ELL15Z	ELL15ZK
ELL16	ELL16K
ELL17(/M)	ELL17K(/M)
ELL18(/M)	ELL18K(/M)
ELL20(/M)	ELL20K(/M)
ELL21(/M)	ELL21K(/M)

NOTICE There are two further variants of Elliptec's range of components, ELLC3 and ELLC4, that consist of five Picoflex® cables. These are described in Table 1 and Table 2.

All components are intended for indoor use only, to be operated with the ambient temperature range of 15 °C to 40 °C and in an environment with maximum humidity below 80% RH (non-condensing) at 31 °C. To ensure reliable operation, the unit should not be exposed to corrosive agents or excessive moisture, heat, or dust. If the unit has been stored at a low temperature or in an environment of high humidity, it must be allowed to reach ambient conditions before being powered up.

The product may only be used in accordance with the instructions described in this manual. Any other use will invalidate the warranty.

1.2 Explanation of Safety Warnings

⚠CAUTION Caution indicates a hazard with a low level of risk that, if not avoided, could result in minor or moderate injury.

NOTICE Indicates information considered important, but not hazard-related, such as possible damage to the product.

CE / UKCA The CE/UKCA markings on the product are the manufacturer's declaration that the product complies with the essential requirements of the relevant European health, safety, and environmental protection legislation.

The symbol on the product, the accessories or packaging indicates that this device must not be treated as unsorted municipal waste but must be collected separately.

1.3 Description

Thorlabs' ELLC1 and ELLC2 Accessory Upgrade Kits are designed to include all the necessary items to convert any single ELL slider, stage, or mount into an ELL kit.

The included ELLC Interface Board features three buttons to control the position of a connected ELL stage and the USB port enables direct connection to a PC via the included 1.5 m USB Micro-B cable. Picoflex® cables with eight loaded circuits provide connection from the Interface Board to the ELL device. A 5 V power supply with a regional adapter (US, UK, AU, or EU) is also available (ELLC2 only).

NOTICE There are two further variants of Elliptec's range of components, ELLC3 and ELLC4, that consist of five Picoflex® cables. These are described in Table 1 and Table 2.

Table 1 shows the components available with each item in the series. Table 2 gives a pictorial representation.

Item #	Interface Board	USB Micro-B Cable	Picoflex®[a] Cable	5 V Power Supply with Regional Adapter (US, UK, AU or EU)
ELLC	✓	-	-	-
ELLC1	✓	✓	✓[b]	-
ELLC2	✓	✓	✓[b]	✓
ELLC3	-	-	✓[c]	-
ELLC4	-	-	✓[d]	-

a. Picoflex is a registered trademark of Molex Incorporated.
b. 1 x 250 mm Molex cable with Picoflex® connectors.
c. 5 x 250 mm Molex cable with Picoflex® connectors.
d. 5 x 500 mm Molex cable with Picoflex® connectors.

Table 1 ELLCx Components

Item #	Components Included
ELLC	
ELLC1	
ELLC2	
ELLC3	
ELLC4	

Table 2 ELLCx Components (Pictorial Representation)

1.4 Technical Data

1.4.1 Specifications

General Specifications		
Location		Indoor Use Only
Maximum Altitude		2000 m
Temperature Range		15 °C to 40 °C
Maximum Humidity		Less than 80% RH (Non-Condensing) at 31 °C
Connectors on Interface Board		Picoflex®, Micro-USB, DC Jack [6.3 mm OD (GND), 2.1 mm ID (+5 V)]
DC Voltage Input		4.5 to 5.5 V
Typical Current Consumption Per Module	**Movement**	800 mA
	Standby	50 mA
Maximum Supported Ribbon Cable Length		520 mm (20.5")
Dimensions (Interface Board Only)		66.0 mm x 32.0 mm x 12.5 mm (2.6" x 1.26" x 0.49")
Weight (Interface Board Only)		10.8 g (0.022 lbs)

1.4.2 Mechanical Drawings

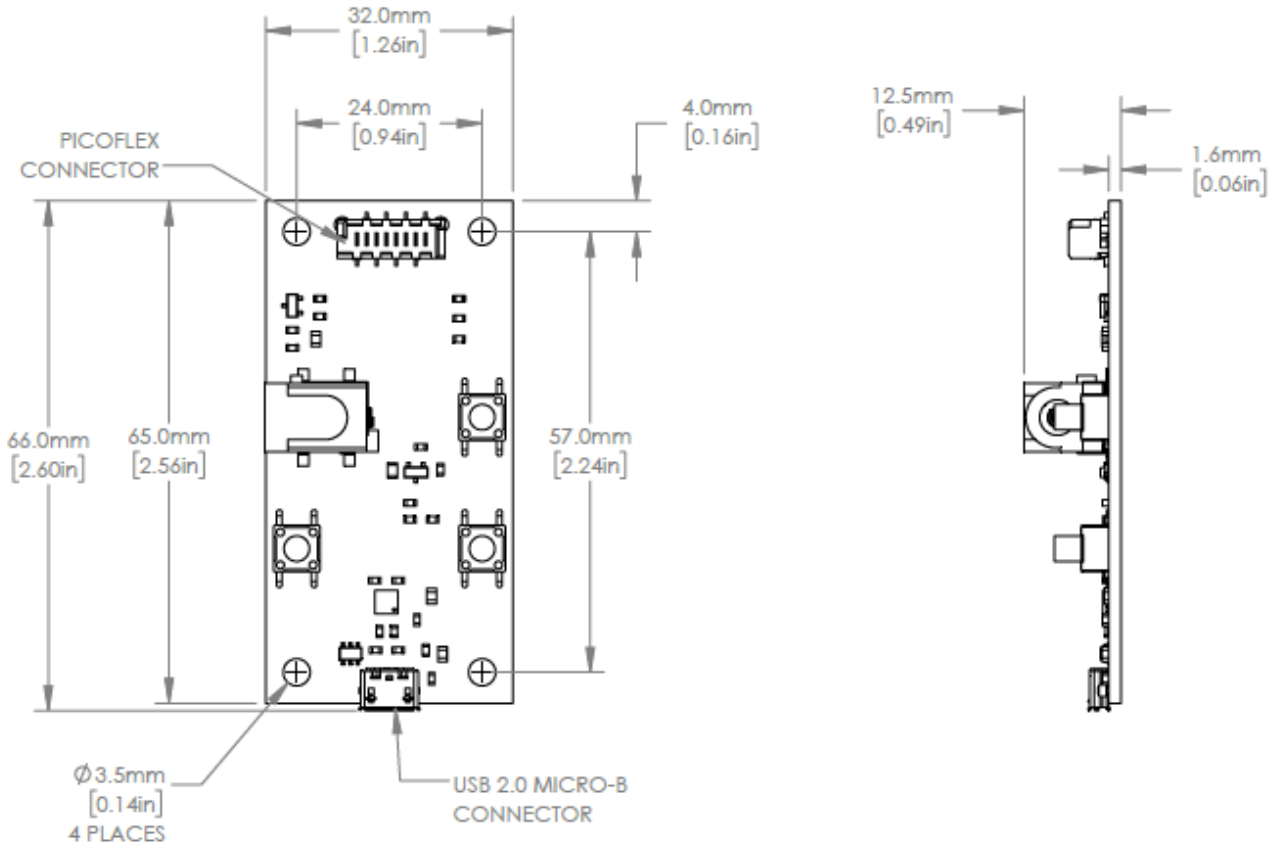


Figure 1 Mechanical Drawing – Interface Board

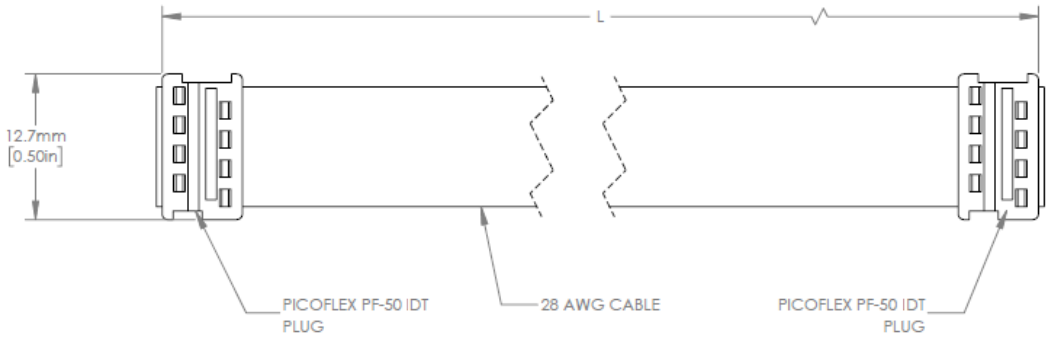


Figure 2 Mechanical Drawing – Picoflex® Cable

Picoflex® cable specifications (Figure 2):

- Picoflex® PF-50 IDT Plugs
- 28 AWG 92315 Series PVC Ribbon Cable
- Maximum Current 1.2 A
- Non-Shielded Cable
- Maximum Voltage 250 V
- Cable Length (L) is Measured from Connectors, End to End

1.5 Pin Diagrams

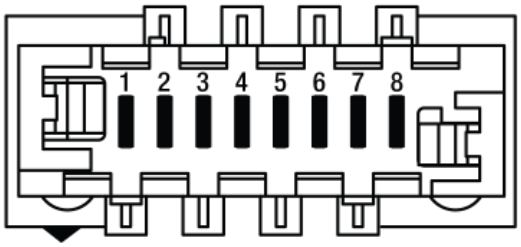


Figure 3 Connector Pin Out Details

Pin	Type	Function
1	PWR	Ground
2	OUT	ODTX – Open Drain Transmit 3.3 V TTL RS232
3	IN	RX Receive – 3.3 V TTL RS232
4	OUT	In Motion, Open Drain, Active Low, Max 5 mA
5	IN	JOG/Mode, Active Low, Max 5 V
6	IN	BW Backward, Active Low, Max 5 V
7	IN	FW Forward, Active Low, Max 5 V
8	PWR	VCC +5V +/-10%; 800 mA

Connector model number MOLEX 538-90814-0808

Mating connector model number MOLEX 538-90327-0308

1.6 Components

The separate components which make up the ELLCx family are described below.

1.6.1 ELLC Interface Board

The ELLC Interface Board, which works with the ELL devices, features three buttons (marked **FW**, **BW** and **JOG**) which control the ELL stage position. The Interface Board also provides for connection to the host PC and to the external 5 V power supply. The external PSU connector allows the ELL stage to be used in the absence of a PC, with control being achieved via the handset buttons.

For operating procedures, refer to the specific stage manuals.

The **PWR** LED (**LED1**) is lit green when power is applied to the unit. The **INM** LED (**LED2**) is lit red when the device being driven is in motion.

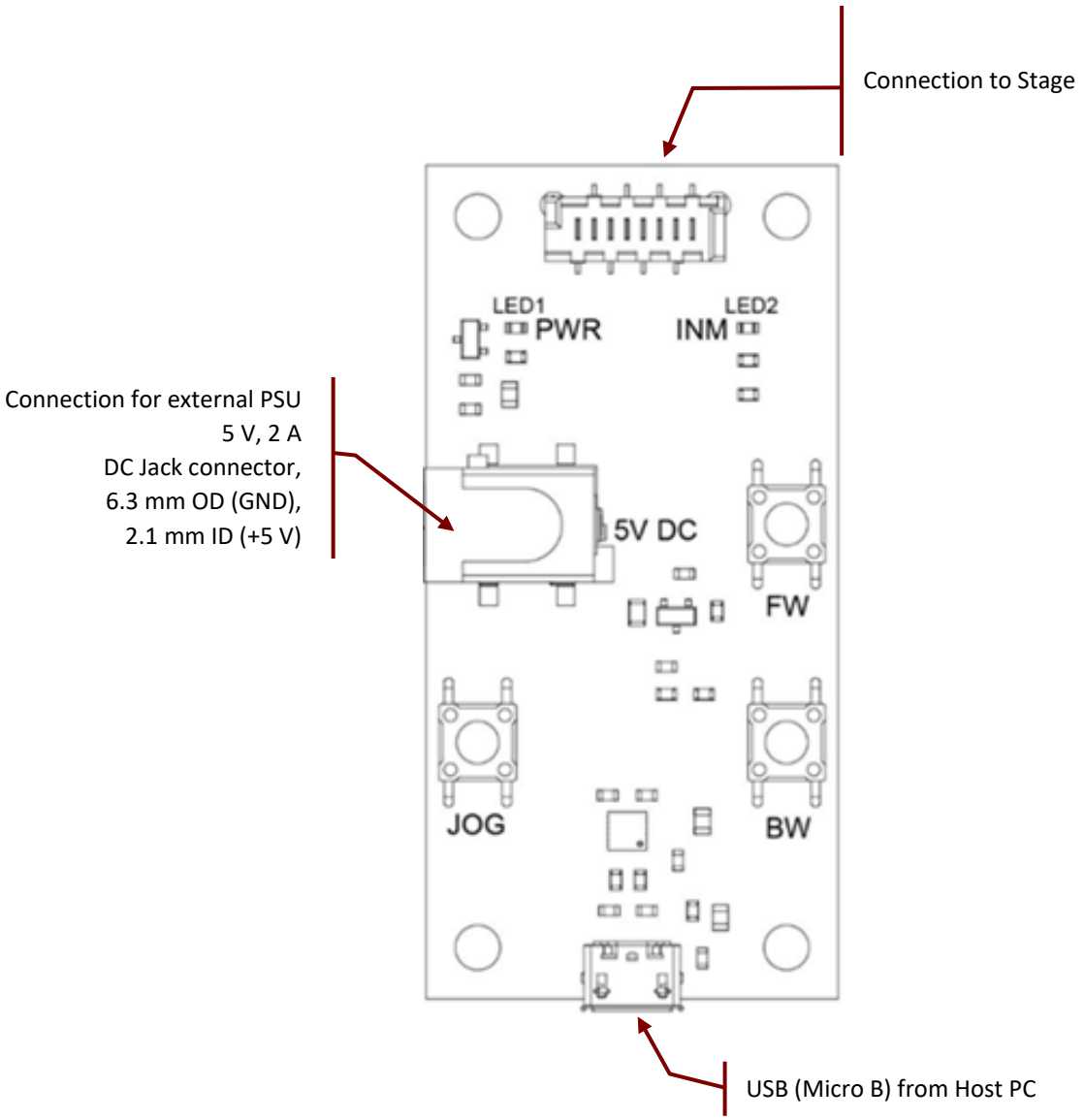


Figure 4 Interface Board

1.6.2 Picoflex® Cable

The cable assembly is fitted with dual-ended connectors with eight loaded circuits. The cable lengths and quantities are specified in Table 3.

Kit or Component	Length	Quantity
ELLC1	250 mm (9.8")	1
ELLC2		1
ELLC3[a]		5
ELLC4[a]	500 mm (19.68")	5

a. Available to be purchased individually.

Table 3 Picoflex Cable Length Options

When multiple units are connected to the same Interface Board, all can be controlled simultaneously using the buttons on the Interface Board. It can sustain a maximum voltage of 250 V and 1.2 A maximum current per contact. The maximum supported ribbon cable length is 520 mm (20.5").

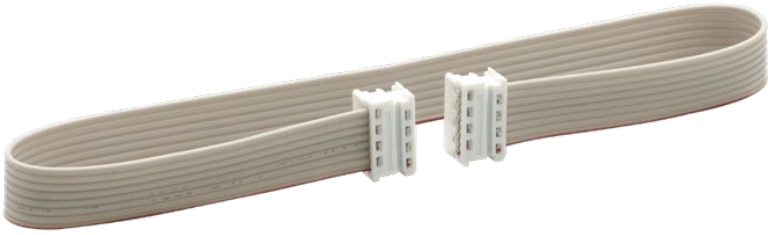


Figure 5 Picoflex® Cable (Ribbon Cable (MOLEX 92315-0825))

1.6.3 USB Cable

The USB cable is a black micro-USB cable version 2.0 with a length of 1.5 m.

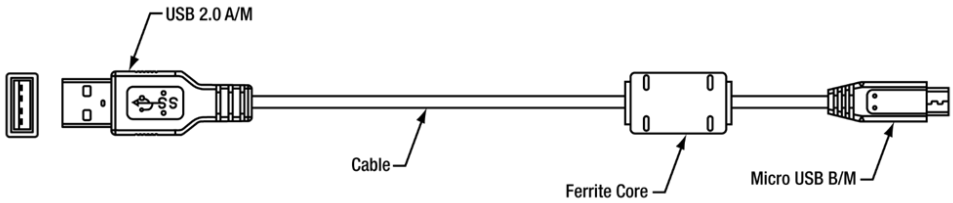


Figure 6 USB Cable

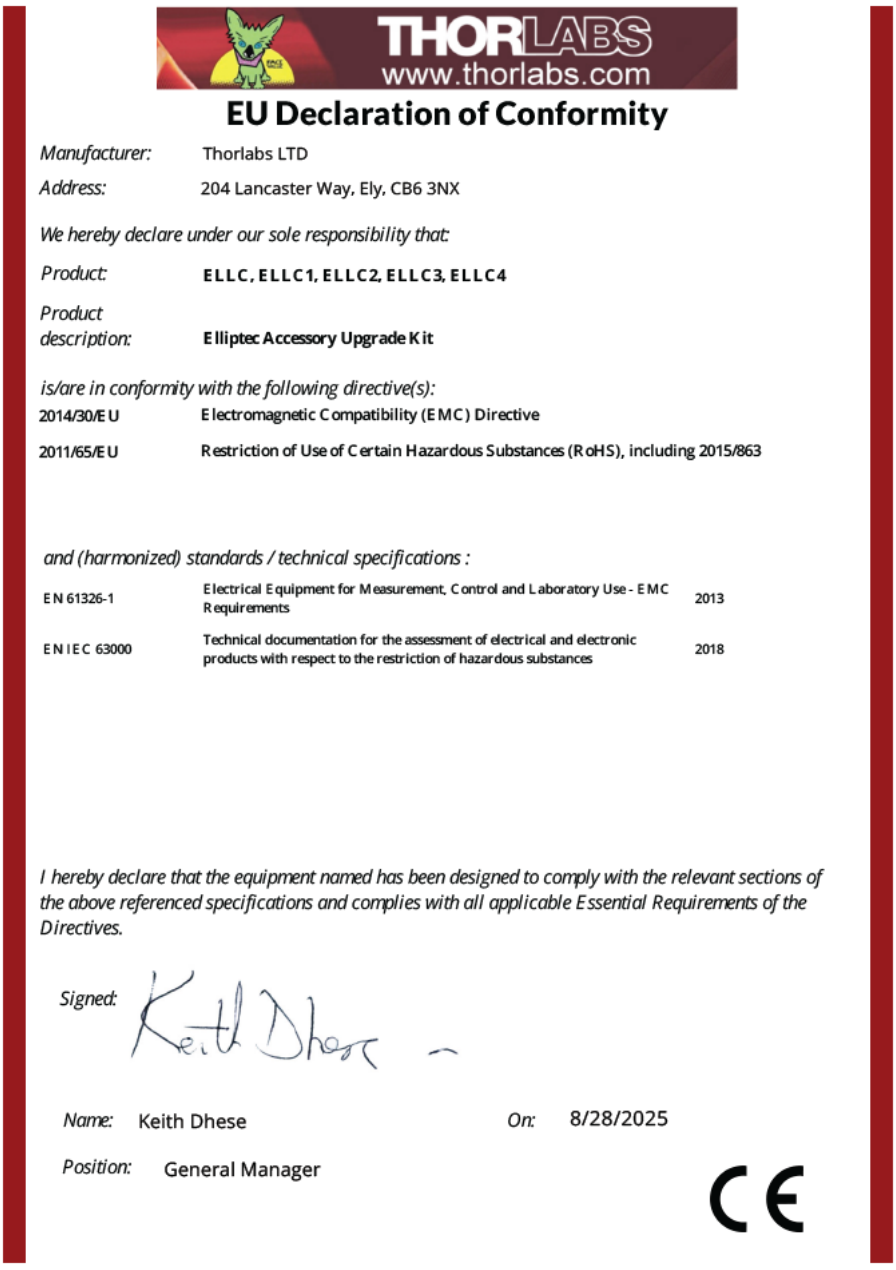
1.6.4 Power Supply (Item # ELLC2 only)

The 5 V power supply includes one region specific adapter (US, UK, AU, or EU).



Figure 7 Power Supply and Regional Adapters

1.7 Simplified Declaration of Conformity



THORLABS
www.thorlabs.com

EU Declaration of Conformity

Manufacturer: Thorlabs LTD

Address: 204 Lancaster Way, Ely, CB6 3NX

We hereby declare under our sole responsibility that:

Product: **ELLC, ELLC1, ELLC2, ELLC3, ELLC4**

Product description: **Elliptec Accessory Upgrade Kit**

is/are in conformity with the following directive(s):

2014/30/EU	Electromagnetic Compatibility (EMC) Directive
2011/65/EU	Restriction of Use of Certain Hazardous Substances (RoHS), including 2015/863

and (harmonized) standards / technical specifications :

EN 61326-1	Electrical Equipment for Measurement, Control and Laboratory Use - EMC Requirements	2013
EN IEC 63000	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances	2018

I hereby declare that the equipment named has been designed to comply with the relevant sections of the above referenced specifications and complies with all applicable Essential Requirements of the Directives.

Signed: Keith Dhese

Name: Keith Dhese *On:* 8/28/2025

Position: General Manager

CE

1.8 FCC Designation

Class A FCC Designation

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Chapter 2 Safety

For the continuing safety of the operators of this equipment, and the protection of the equipment itself, the operator should take note of the Warnings, Cautions and Notes throughout this handbook and, where visible, on the product itself.

2.1 Exposure

⚠CAUTION

Impairment of Operation and Damage to Equipment
To ensure reliable operation the unit should not be exposed to corrosive agents or excessive moisture, heat or dust.

Chapter 3 Disposal



Thorlabs verifies our compliance with the WEEE (Waste Electrical and Electronic Equipment) directive of the European Community and the corresponding national laws. Accordingly, all end users in the EC may return “end of life” Annex I category electrical and electronic equipment sold after August 13, 2005 to Thorlabs, without incurring disposal charges. Eligible units are marked with the crossed out “wheelie bin” logo (see right), were sold to and are currently owned by a company or institute within the EC and are not dissembled or contaminated. Contact Thorlabs for more information. Waste treatment is your own responsibility. “End of life” units must be returned to Thorlabs or handed to a company specializing in waste recovery. Do not dispose of the unit in a litter bin or at a public waste disposal site. It is the user’s responsibility to delete all private data stored on the device prior to disposal.

Chapter 4 Thorlabs Worldwide Contacts

For technical support or sales inquiries, please visit us at www.thorlabs.com/contact for our most up-to-date contact information.



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