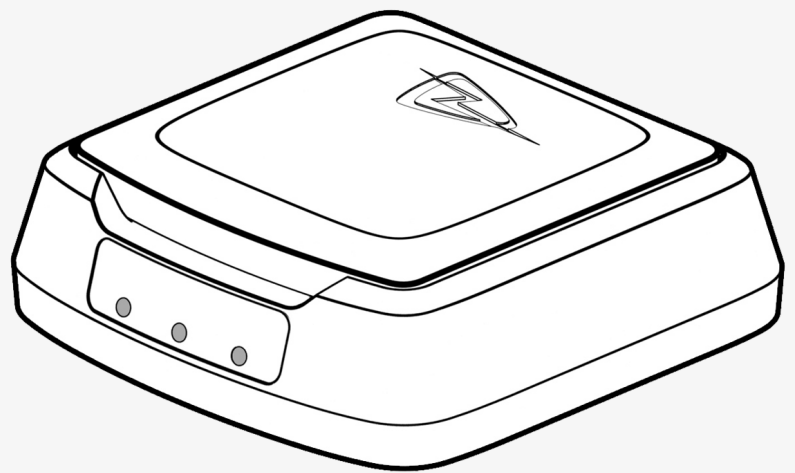




TECHNOLOGY
SOLUTIONS UK LTD
part of **HID**

USER GUIDE: 1126 DESKTOP UHF RFID READER WITH USB



www.tsl.com

Design • Development • Manufacture

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History

<u>Version</u>	<u>Date</u>	<u>Modifications</u>
1.0	17/09/2010	Document creation
1.1	05/04/2011	Update to Inventory screen with addition of Save button.
1.2	18/09/2012	Photographs updated Update demonstration and com port notes
1.3	01/10/2013	Added notes on ASCII 2.x protocol

INTRODUCTION

Technology Solutions' 1126 Desktop UHF Reader connects to a host computer over USB to provide the capability of reading and writing EPCGlobal Class 1 Generation 2 transponders. All power is provided by the host computer.

PARTS OF THE 1126 UHF READER

FIGURE 1: Front View

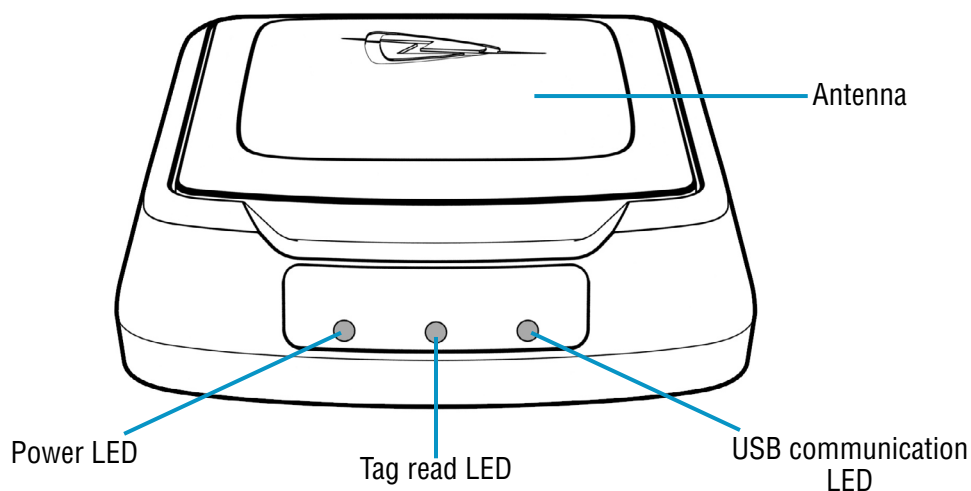
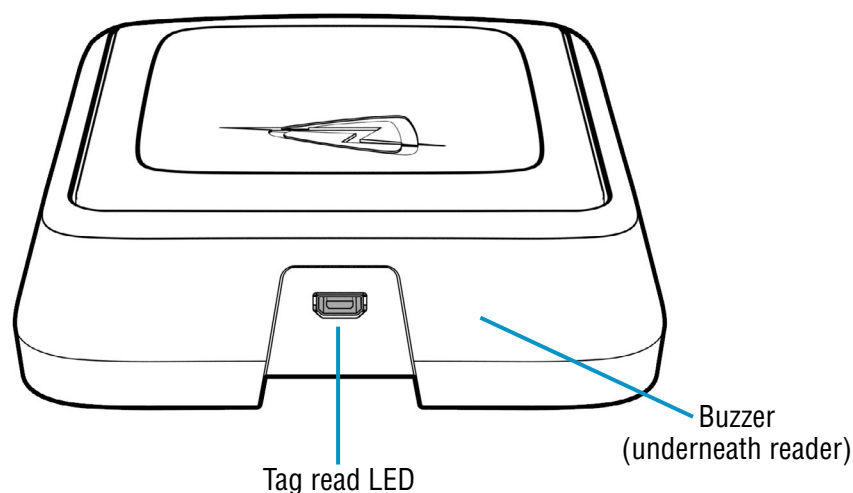


FIGURE 2: Rear View



LED functions and colours

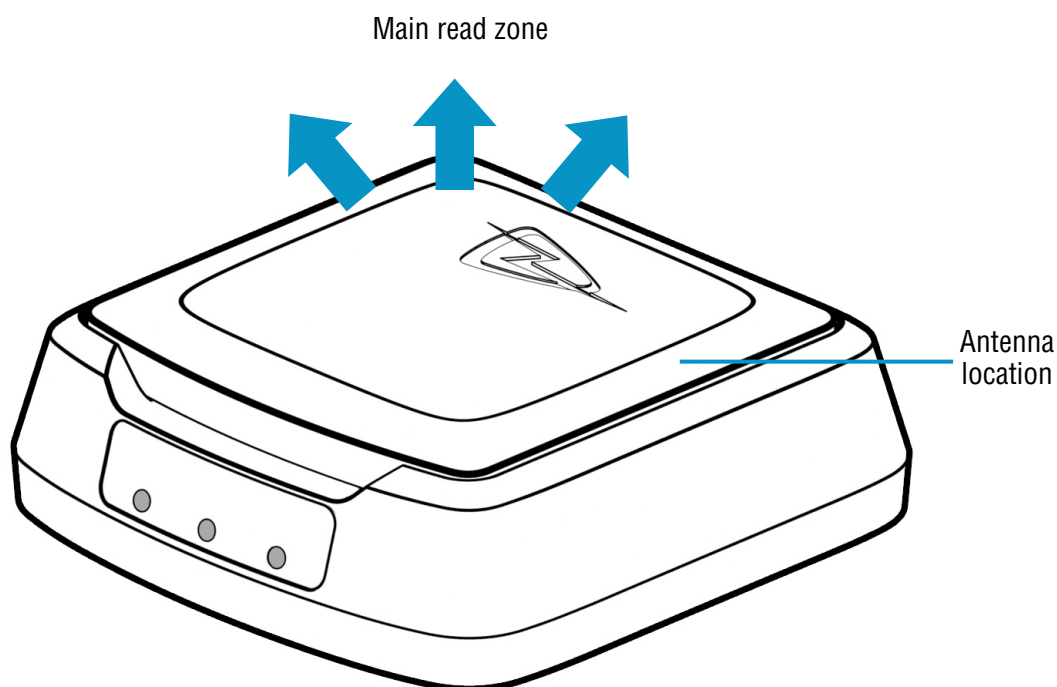
Power - Green	Lights whilst the reader is powered by the host computer.
Tag read - Orange	Flashes when a transponder has been read. May be deactivated under software control.
USB communication - Red	Flashes whilst data is being transferred between the reader and host computer.

The buzzer is software controlled and can be used to indicate a successful tag read or given some other function.

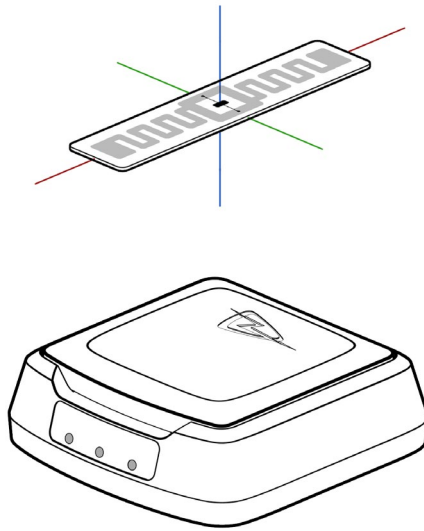
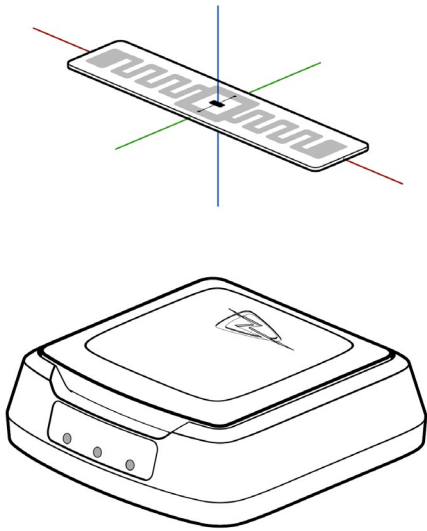
For best performance the Desktop Reader should be plugged directly into the host computer with the USB cable supplied. Using USB extension cables, low quality USB cables or unpowered hubs will reduce the power available to the Desktop Reader and reduce the tag read rate.

ANTENNA LOCATION AND TAG READING ORIENTATION

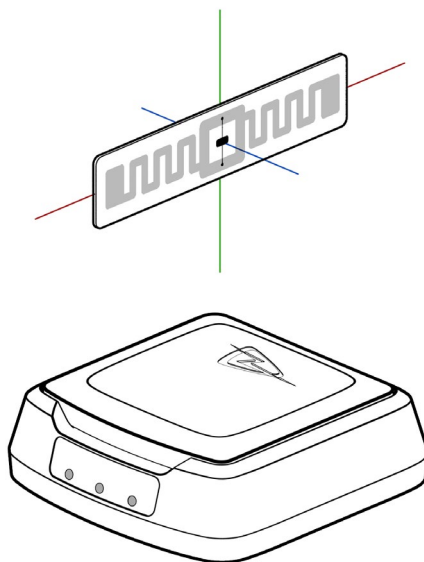
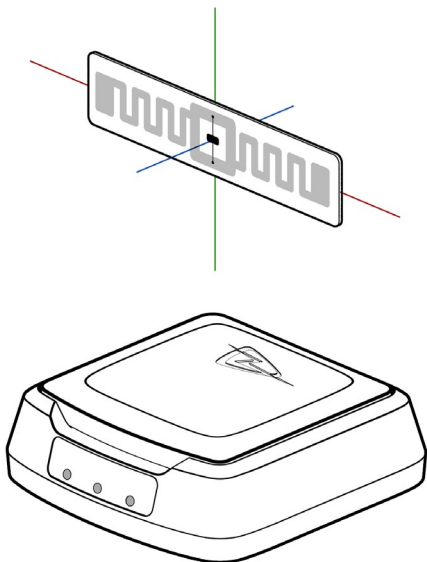
The antenna is located under the cover and reads upwards as shown below:



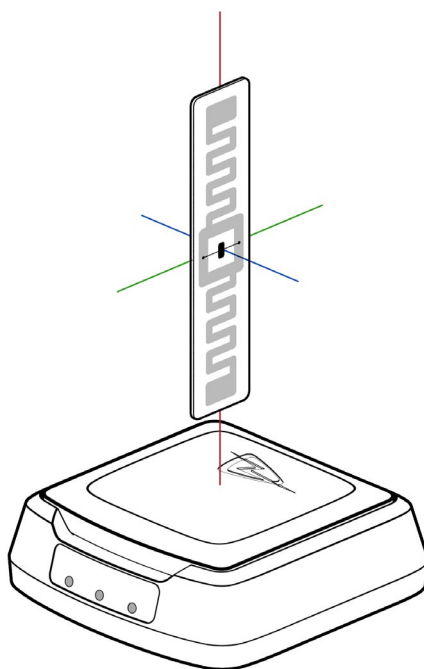
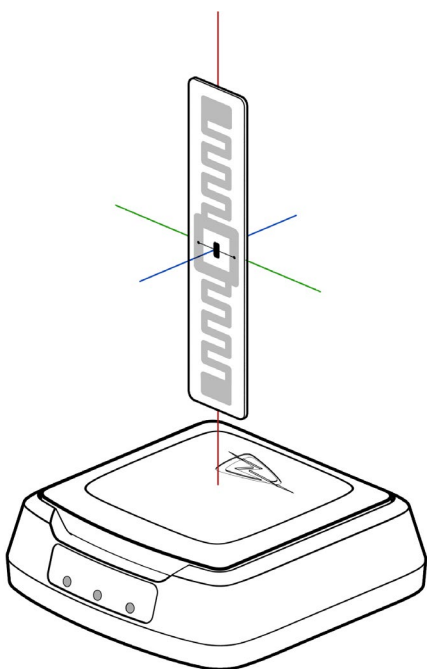
Tags are read optimally when they lie in a plane parallel to the antenna cover. The antenna is circularly polarised which means that the tags can lie in any position on the plane. Tags which are aligned vertically will not be read well. The pictures below illustrate good and bad tag orientations.



CORRECT



CORRECT



INCORRECT

INSTALLING THE SOFTWARE

DRIVER INSTALLATION

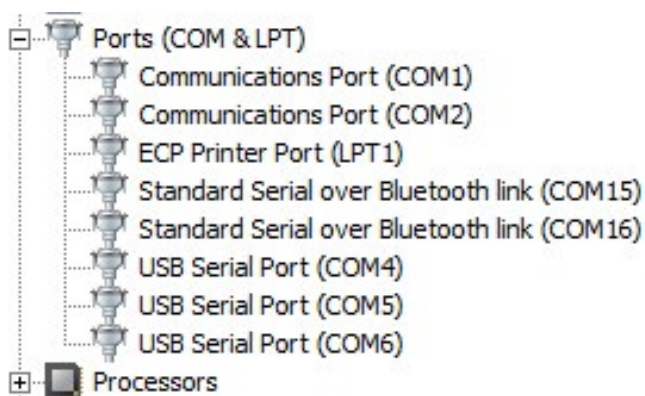
Demonstration software is provided for use with Windows XP, Vista and 7. The following instructions assume one of these operating systems is being used. Drivers are available for other operating systems but no demonstration software is provided. Contact Technology Solutions Support (support@tsl.com) for further information.

Plug in the reader to a USB port capable of supplying 500mA. This will usually need to be a port on a computer rather than a hub, unless the hub is powered.

The reader will be discovered and the driver software should be automatically located and installed (the computer may need to connect to the internet to obtain the driver.)

The reader will be given a Virtual Com port (VCP) as part of the driver installation. If you have several devices already connected to your computer (including Bluetooth devices) you may need to use Device Manager to find out which VCP has been given to the reader.

Navigate to Device Manager from 'Start>Control Panel>Device Manager' (or one of the many alternative ways). Expand the section 'Ports (COM & LPT)' to see a list of the available ports. This will look similar, but not identical to the one below:



Unplug the reader and one of the USB Serial Port entries will disappear. Plug it back in and the entry will reappear. This is the VCP for the Desktop Reader.

DEMONSTRATION SOFTWARE INSTALLATION

To demonstrate the capabilities of the UHF RFID Desktop reader install and use the UHF ASCII Demo FX as directed on the CD.

SOFTWARE DEVELOPMENT

The 1126 Desktop UHF Reader supports both Technology Solutions UHF RFID SDK and the Technology Solutions ASCII 2.x Protocol.

ASCII PROTOCOL 2.X

The ASCII Protocol is a powerful yet easy to use way to command the UHF reader from a terminal application on the desktop. This allows quick experimentation with the ASCII command set, the ASCII Protocol Explorer application is provided for this purpose.

There is an SDK to develop applications using the ASCII protocol available to download along with sample applications.

The UHF Desktop reader driver is presented as a USB virtual com port. Open the com port that the reader is connected to at 115200 baud, 8 data bits, no parity, 1 stop bit with CTS/RTS hardware handshaking.

UHF RFID SDK

If required the 1126 Desktop UHF reader also supports the Technology Solutions RFID SDK. This SDK is available for purchase and is supplied as part of the explorer kit.

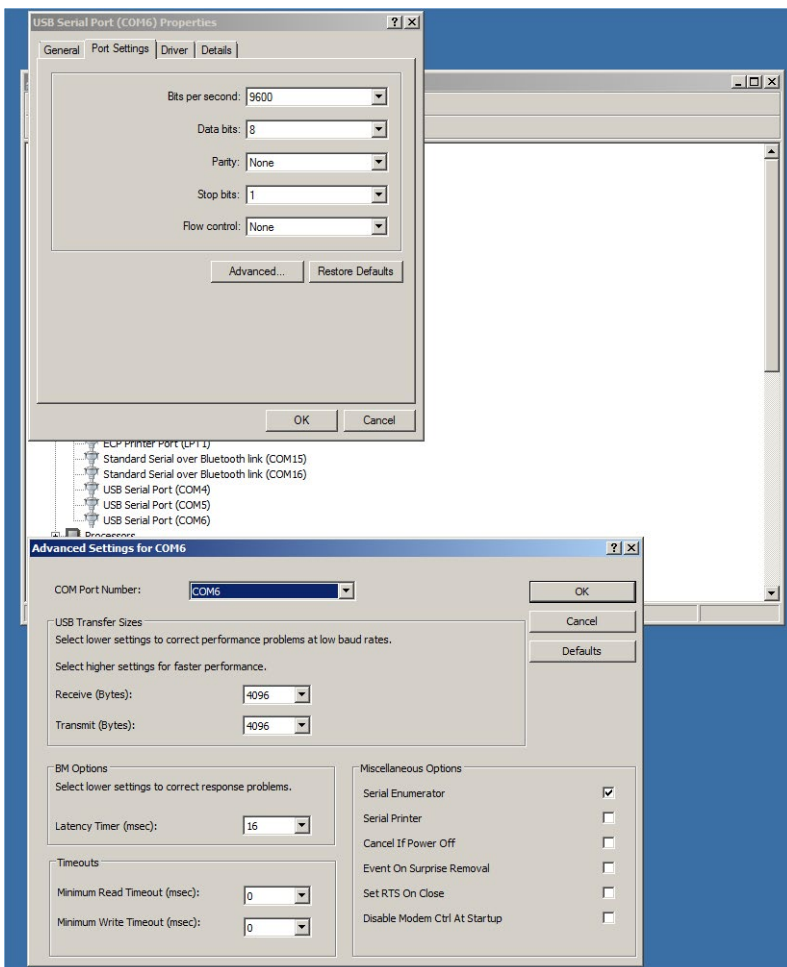
TROUBLESHOOTING

READER IS SLOW TO RESPOND

If the Desktop Reader pauses for a second or longer before responding to a command sent to it then the USB connection may be introducing excessive voltage loss. The Desktop Reader pauses to allow an internal power store to be recharged before doing a transponder read. A voltage drop in the cable used to connect the reader slows down the recharge. For best performance the USB cable used should be short, good quality and not connected through an unpowered hub.

USB SERIAL PORT NUMBER TOO HIGH

In some cases where there have been a lot of other devices installed on the host computer the UHF reader may be given a Virtual Com Port (VCP) with a higher number e.g. COM35. Some applications are unable to connect to com ports greater than 16. To resolve this, navigate to Device Manager from 'Start>Control Panel>Device Manager' (or one of the many alternative ways). Expand the section 'Ports (COM & LPT)' to see a list of the available ports. Right click on the Reader port and select 'Properties', then the 'Port Settings' tab and the 'Advanced button' to get to the screen shown below:



Select a spare COM port number below 16. This may still show as 'In use'. So long as the device that was using it has been disconnected it is safe to ignore the warning and click 'OK' to complete the change of port.

TECHNICAL SPECIFICATIONS

SUMMARY OF SPECIFICATIONS

The following table summarises the 1101 UHF READER's intended operating environment and technical hardware specifications:

Symptoms	
Frequency	865 – 868 MHz (ETSI mode) 902 – 928 MHz (FCC mode)
RF Power	10 - 800 mW (software controlled)
Antenna	Integrated circularly polarised element
Read distance	Up to 1.5 m (5 feet) (tag dependent)
Supported UHF tags	EPC Class 1 Generation 2 (ISO18000-6C)
Physical Characteristics	
Dimensions (without USB cable)	109 mm(w) × 110 mm (l) × 34 mm (h) maximum – 4.3" x 4.3" x 1.3"
Weight (excluding baseplate)	180 g (6.3 oz)
Enclosure material	Polycarbonate
Colour	Grey
Material finish	Sparked surface
Baseplate	Standard has rubber feet for desktop operation. Option for wall mount or pedestal mount.
Power	5V, 500 mA maximum from host USB.
Environmental	
Operating Temperature	-20°C to +60°C (14°F to 122°F)
Storage Temperature	-40°C to +60°C (-40°F to 140°F)
Humidity	Up to 90% Relative humidity Non Condensing
Sealing	IP54

WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE)

For EU Customers: All products at the end of their life must be returned to TSL for recycling. For information on how to return product please contact TSL.

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(A) Warranty

TSL's hardware Products are warranted against defects in workmanship and materials for a period of twelve (12) months from the date of shipment, unless otherwise provided by TSL in writing, provided the Product remains unmodified and is operated under normal and proper conditions. Warranty provisions and durations on software, integrated installed systems, Product modified or designed to meet specific customer specifications ("Custom Products"), remanufactured products, and reconditioned or upgraded products, shall be as provided in the applicable Product specification in effect at the time of purchase or in the accompanying software license.

(B) Spare Parts

Spare parts (i.e. parts, components, or subassemblies sold by TSL for use in the service and maintenance of Products) are warranted against defects in workmanship and materials for a period of thirty (30) days from the date of shipment. Spare parts may be new or originate from returned units under the conditions set forth in subsection D below.

(C) Repair of TSL branded hardware

For repairs on TSL branded hardware Products under this Agreement, including repairs covered by warranty, the repair services provided are warranted against defects in workmanship and materials on the repaired component of the Product for a period of thirty (30) days from the shipment date of the repaired Product, or until the end of the original warranty period, whichever is longer. Any such defects shall be notified to TSL in writing within 7 days of the same becoming apparent.

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Products may be serviced or manufactured with parts, components, or subassemblies that originate from returned products and that have been tested as meeting applicable specifications for equivalent new material and Products. The sole obligation of TSL for defective hardware Products is limited to repair or replacement (at TSL's option) on a "return to base (RTB)" basis with prior TSL authorisation.

Customer is responsible for prompt shipment to TSL and assumes all costs and risks associated with this transportation; return shipment to the Customer will be at TSL's expense. Customer shall be responsible for return shipment charges for product returned where TSL determines there is no defect ("No Defect Found"), or for product returned that TSL determines is not eligible for warranty repair. No charge will be made to Buyer for replacement parts for warranty repairs. TSL is not responsible for any damage to or loss of any software programs, data or removable data storage media, or the restoration or reinstallation of any software programs or data other than the software, if any, installed by TSL during manufacture of the Product.

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- (ii) in which the defects or damage to the Product result from normal wear and tear, misuse, negligence, improper storage, water or other liquids, battery leakage, use of parts or accessories not approved or supplied by TSL, or failure to perform operator handling and scheduled maintenance instructions supplied by TSL;
- (iii) which has been subjected to unusual physical or electrical stress, abuse, or accident, or forces or exposure beyond normal use within the specified operational and environmental parameters set forth in the applicable Product specification; nor shall the above warranty provisions apply to any expendable or consumable items, such as batteries, supplied with the Product.

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TSL shall not be responsible for any injury, damage or loss of whatever kind caused directly or indirectly by the goods whether as a result of their manufacture, operation, use or otherwise and the customer shall indemnify TSL from any claim arising from any loss suffered by any third party.

ABOUT

ABOUT TSL®



Technology Solutions UK Ltd (TSL®), part of HID Global, is a leading manufacturer of high performance mobile RFID readers used to identify and track products, assets, data or personnel.

For over two decades, TSL® has delivered innovative data capture solutions to Fortune 500 companies around the world using a global network of distributors and system integrators. Specialist in-house teams design all aspects of the finished products and software ecosystems, including electronics, firmware, application development tools, RF design and injection mould tooling.

TSL® is an ISO 9001:2015 certified company.



ISO 9001: 2015

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