



Interlink Domestic Integration Specification

January 2014

Version 2.1

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Confidential

VERSION HISTORY

<i>Version</i>	<i>Changes</i>	<i>Date</i>	<i>Author</i>
2.0	Document Created	Aug 2010	Automation
2.1	Document Revision	Jan 2014	Automation
2.2	Psuedo Postcode Correction	June 2014	Automation

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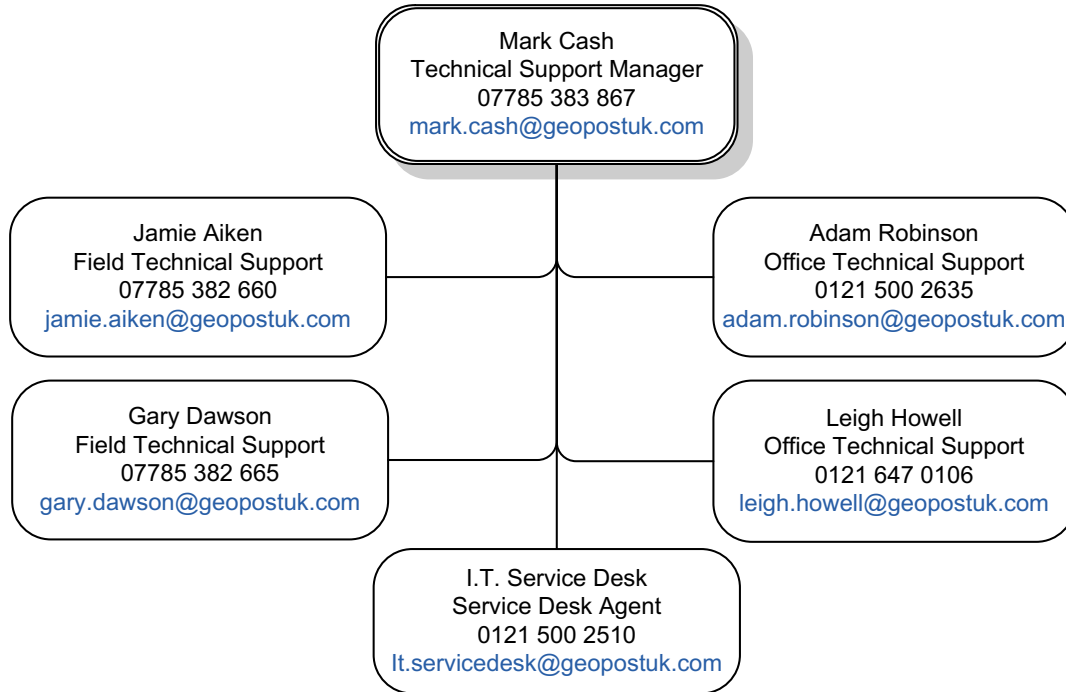


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SUPPORT CONTACTS



For all Label Test Packs send to:

FAO: Leigh Howell / Adam Robinson
GeoPost UK
I.T Department (ATS)
2nd Floor, Hub 3
Broadwell Road
Oldbury
West Midlands
B69 4DA

Scan QR barcode below for address and contact details:



NOTE: Please ensure a cover note is included on test packs posted so we can identify the sender.



GETTING STARTED

Please contact the Automation Team prior to starting development to ensure you have the latest version of the documents.

NOTE: The Automation Team are able to offer onsite support Free of Charge to assist with your Development. See Support Contacts above.

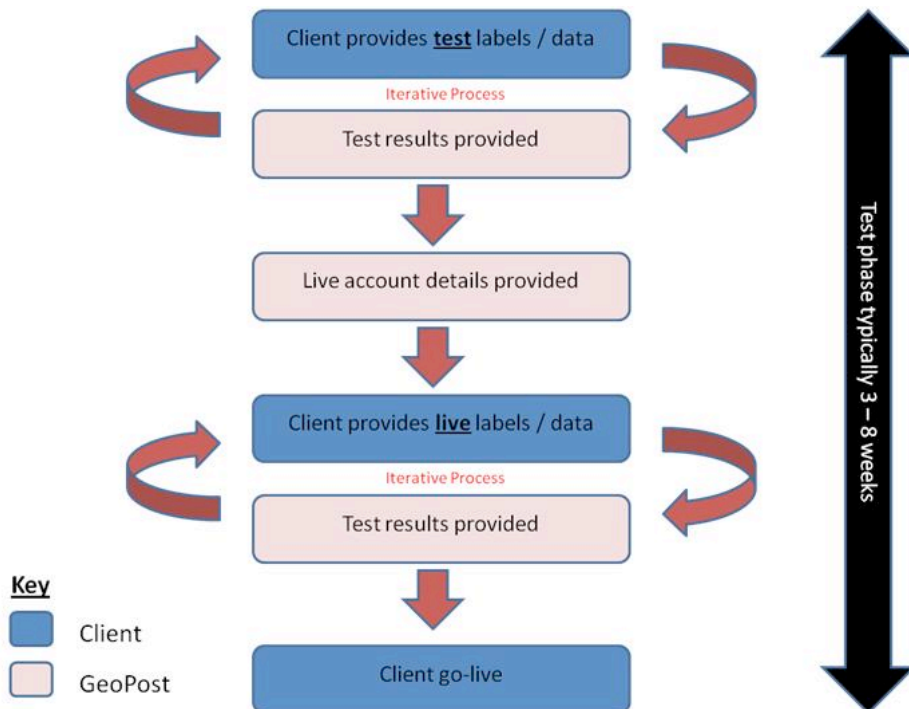
To access the latest development tools, integration specifications and routing tables please click on the below GeoPost UK Tool Kit icon:



Alternatively you can access the GeoPost UK FTP Site using the credentials below:

Server: **ftp.geopostuk.com**
User: **edidev**
Password: **acy7bies**

Label and Manifest Data Development Lifecycle



Testing Details

NOTE: The Interlink Customer Automation Technical Team **must** be informed when a customer wishes to start development work, due to the possibility of further system development and changes since this document was printed. We aim to provide test pack feedback within 48 hours.

Development Test Details

Account Number: **123456**

Parcel range: **911,000,000 -> 911,999,999**

Consignment range: **811,000,000 -> 811,999,999**

Authorisation Code: **00000284**

FTP: **ftp.geopostuk.com**

User: **slid1999**

Pass: **auto1234**

Directory: **IN**

Please use the sample addresses in our Toolkit Section for testing label and data output as this will contain variations of postcodes, services and quantities. You can also access the address spreadsheet below.



Interlink UK Test
Addresses.xls

NOTE: The samples will contain some elements that fail in our routable requirements just to ensure your validation logic is correct.

Development Live Details

A formal sign-off **must** be obtained from the Automation Technical Support Team before live shipping is accepted. Once we have successfully signed off your labels and manifest data, we will then require one final test pack containing the **LIVE** details (assigned by your support contact) to include both labels and corresponding data.

Interlink may revoke the authorisation to ship if subsequent problems arise with data integrity or label quality.



WARNING: It is recommended that the first live runs be of small volumes, and monitored by both Interlink and the client.

POSTCODE & SERVICE VALIDATION

Geogaz

Geogaz is the postcode and services validation table, this does also contain International routing elements (for International shipping see separate specification). Please obtain the latest Geogaz routing table from the FTP Site:



You must update to the latest routing table on daily basis to ensure you obtain the latest version release. The header row of the Geogaz table contains the version number so if this changes from your current version update immediately as shown below.

#Version|XX|Issue date|8/1/2013|Use from |9/1/2013|25 fields

Where **XX** is the version number of that routing table.



WARNING: If you are not using the latest routing version release this could potentially result in delayed delivery times.

Table Description

File section	Key fields for indexing	Comments
SERVICE	Field 2 -Service Code	This section lists all the different services and the rules required for each.
GROUP	Field 2 - Look-up Code	The list of available services in the GROUP table is 100 characters long, with each service represented by its position in the list. '1' denotes a valid service.
OFFSHORE	Field 2 – Look-up Code	This section is used ONLY if the sending location is “offshore”. It determines which services are available from that location. If you are unsure please liaise with your Interlink contact.
TIMES	Field 2 – Timeslot Code	This section is used ONLY if you are sending traffic within specified hourly timeslots. See Timed Specification for further details.
DOMESTIC	Field 2 – Postcode Sector	This section (records starting “D ”) lists all postcode sectors. This validates a postcode area is valid at the date stated in the table header. The Interlink services group (field 10) relates to the Group section of services available.

Operation of the Geogaz Table for Mainland-Based Shippers

Step 1 (Search Postcode List)

Search the Domestic table (records starting “D”) for the postcode sector and read the ILK Services Group allocated to that postcode area. If there is a New Postcode (field 15) then use this on the address label. The ILK Service Group for the “old” postcode is still valid and you do not need to perform a new lookup.



WARNING: If the postcode area is not found a label should NOT be printed.

Step 2 (Confirm Service)

Find the 2 Digit Service Code from the Services section for the service you wish to use. Ensure the maximum quantity (field 12) and weights (field 13) are valid for the required service.

Step 3 (Validate Service Availability)

Read the ILK Services Group, as described in Step 1. Use this to then lookup the Group section for available services. Each position has a ‘1’, ‘0’ or ‘-’. A ‘1’ relates to a valid service, ‘0’ or ‘-’ relates to an invalid service.

Scenario Example: You wish to send a Next Day Parcel to the postcode B66 1BY.

Step 1 (Search Postcode List)

```
#DOMESTIC|PostCode Sector|DPD Depot|DPD Services Group|DPD Offshore zone|Timeslots
code||ILK Depot|ILK Services Group|ILK Offshore zone|ILK Alternate Service||New Postcode|||||||
D|B66 1|0030|23|3||1528|57|||||||||
```

Step 2 (Confirm Service)

```
#SERVICES|2 Digit Service Code|3 Digit Service Code|DPD Product Desc|DPD Label Service
Desc|ILK Product Desc|ILK Label Service Desc|ILK Alternative Service Desc|Premium|seC DPD|seC
ILK|ILK Max Parcels per con|ILK Max Weight per parcel|DPD Max Parcels per con|DPD Max
Weight per parcel|||||||
SERVICE|12|812|Parcel|Next Day|parcel|next day||N|12|212|99|30|99|30|||||||
```

Step 3 (Validate Service Availability)

```
#GROUPS|Lookup Code|List of Available Services|Business|||||||||||||
GROUP|57|111011001-0110011101100000001-1110011101111001010-000110100-000000111-
000000000-1110011101000000000-|I|||||||||||||
```

The 12th position is a 1 so the service is available.



LABEL DESIGN



WARNING: We strongly advise label stationary width to measure at least 105 mm. We will not sign off any labels below 102 mm width. Please contact a member of the technical team for further queries.

Primary UK Bar Code - CODE 128

NOTE: Use Subset B for a UK post code followed by Subset C for rest of bar code string. For Ireland (EIRE) refer to page 15.

The primary bar code used as part of the GeoPost bar code strategy is a Code 128 bar code. Code 128 is a variable length, high-density alphanumeric symbology. Three different subsets tell the bar code reader which character set to use initially. GeoPost requires subset C for the numeric portion of the bar code. The alphanumeric portion of the bar code uses subset B.

<i>Subset</i>	<i>Description</i>
Code 128 A	The first sub-set encodes all uppercase and ASCII control characters
Code 128 B	The second sub-set encodes all upper case characters i.e. Alpha Numeric Post Code
Code 128 C	The third sub-set encodes numeric digit pairs 00 through 99 (Numeric)

See below the code 128 barcode character set.



Barcode Character Set

Bar-Code Data Content

The data content of the Interlink Code 128 bar code is 28 characters as specified below. The shaded area indicates the unique GeoPost 14 digit tracking number.

<i>Character</i>	<i>Length</i>	<i>Subset</i>	<i>Field</i>	<i>Description</i>
1	1	B – Alpha	Identification Tag = “%”	Interlink barcode identification
2-8	7	B	Destination Post Code	Destination post code
9-12	4	C – Numeric	Origin Identification	Code to identify the Interlink UK Origin. This is 1597



13	1	C	Parcel Range Prefix	Always the number 6
14-22	9	C	Origin Parcel Number	Parcel Number linked to GeoPost Origin
23-25	3	C	Service Code	Interlink Service Code
26-28	3	C	Destination Country Code	3 digit UK destination country code (826)

28 Digit Bar Code Structure

Pos.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
e.g.	%	0	B	6	6	1	B	Y	1	5	9	7	6	9	1	1	0	0	0	0	0	1	8	1	2	8	2	6
Subset	B	B	B	B	B	B	B	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Field	%	P	P	P	P	P	P	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	S	S	S	C	C	C

Using the highlighted example above:

- % - Identification Tag
- 0B661BY** – Delivery post code (padded with a zero to make 7 alpha numeric characters)
- 1597** - Business origin
- 6** – Parcel range prefix
- 911000001** - Parcel number
- 812** - Service code
- 826** - Country code

Character contents (Field):

- % - GeoPost identification Tag
- P - Destination Postal Code (All spaces **must** be removed.)
- T - Tracking Number (Origin Code + parcel prefix + **unique** 9 Digit parcel number)
- S - Service Code
- C - Destination Country Code



Bar Code Metrics

The important physical properties evaluated on the Interlink Code 128 bar code are detailed below. Use only white label stock (Direct thermal printing preferred).

Laser/Thermal Printer



Bar Size

X-Dimension (Narrow Bar Width):
Minimum: 0.375 mm
Maximum: 0.5 mm

Overall Bar Code Size

Barcode dimensions:
Minimum: 91.5mm x 25mm height
Maximum: 115mm x 25mm height

Using the above minimum narrow bar width of 0.375 the barcode will output to 91.5 mm, as the below document explains.



Barcode Width
Calculation

Bar-Code Quiet Zones

You **must** have a minimum of 5 mm on either side of the bar code extending at 45 degrees from the corners (see below). You **must** have a minimum of 1 mm on top and bottom of the entire barcode also.



Parcel Label Formats

The parcel label contents are divided into the following Information Zones.

<i>Zone</i>	<i>Mandatory / Optional</i>	<i>Description</i>
CODE 128 Bar Code	Mandatory	The Primary Bar Code to identify the package
Delivery Address	Mandatory	Package Receiver Address
Delivery Details	Mandatory	Package Receiver Details
Origin Business Unit	Mandatory	Origin Business Unit Details
Sender Details	Mandatory	Package Sender Details (or 'virtual' details, if private). The account number is mandatory, the senders address is optional.
Routing Details	Mandatory	Text for parcel routing, the text will be retrieved from the GeoPost Routing reference tables - determined by origin, destination, service, time of day.
Carrier Text	Optional	Carbon neutral parcel delivery message
Additional Info	Optional	Delivery instruction for driver

The following sections illustrate a thermal printed label.





Routing Label Text Details

Routing text is printed on the label to enable human readable sorting; the following section illustrates the format and text with an example.

Note: Text sizes may vary dependant on printer and available fonts, the text proportions **must** be used to accommodate the mandatory text.

Parcel Tracking No

Format: **TTTT TTTT TTTT TTT** (15 Characters)

E.g: **1597 9111 0000 01P**

Origin Code (first 4 digits) must be highlighted in **bold**

14 digit Parcel Identification number followed by a check digit (see Tool Kit for check digit calculation).

Service Text

Information taken from the Geogaz routing table to enable visual identification of the service.

Format: **SSSSSSSSSS** (see ILK Label Service Desc in Geogaz table)



E.g. Next Day (Reverse video if specified as Premium “Y” in the Geogaz table)

SERVICE|13|813|Parcel|DPD 12:00|parcel|by 12|by 1|Y|13|213|99|30|99|30||||||||

Service Code / Country Code /Destination Postal Code

Format: SSS-CC-PPPP PPP
 E.g. 812-GB-B66 1BY
 SSS = Service Code
 CC = Country Code (ISO 2 Char Alpha)
 PPPP PPP = Postal Code

Label Origin

Format: 35 Characters – See first line above barcode
 Information to identify the origin location of the label, the text must include the following details:

- Date the label was produced
- Time of label print
- Routing table version number - Found in first row of Geogaz routing table.

Bar Code Text Representation

This relates to the eye readable text below the barcode. This must be broken up into 4 character blocks.

Digit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
e.g.	0	B	6	6	1	B	Y	1	5	9	7	6	9	1	1	0	0	0	0	1	8	1	2	8	2	6	7	
Field	P	P	P	P	P	P	P	T	T	T	T	T	T	T	T	T	T	T	T	T	S	S	S	C	C	C	D	

Character contents (Field):

- P - Destination Postal Code
- T - Tracking Number (Origin Code + parcel prefix + **unique** 9 Digit parcel number)
- S - Service Code
- C - Destination Country Code
- D – Check Digit Character

E.g. 0B66 1BY1 5976 9110 0000 1812 8267

Local Flag

This is applied where the delivery postcode depot number matches the sender’s depot number and must be in reverse video. For example, if the sender’s collection postcode is B66 1BY, the depot number would be 1528:

D|B66 1|0030|25||3||1528|60||||||||

If then sending a parcel to say B66 2AA, the depot number remains the same so the LOCAL flag is applied:

D|**B66 2**|0030|25||3||**1528**|60|||||||||

Label Field Sizes

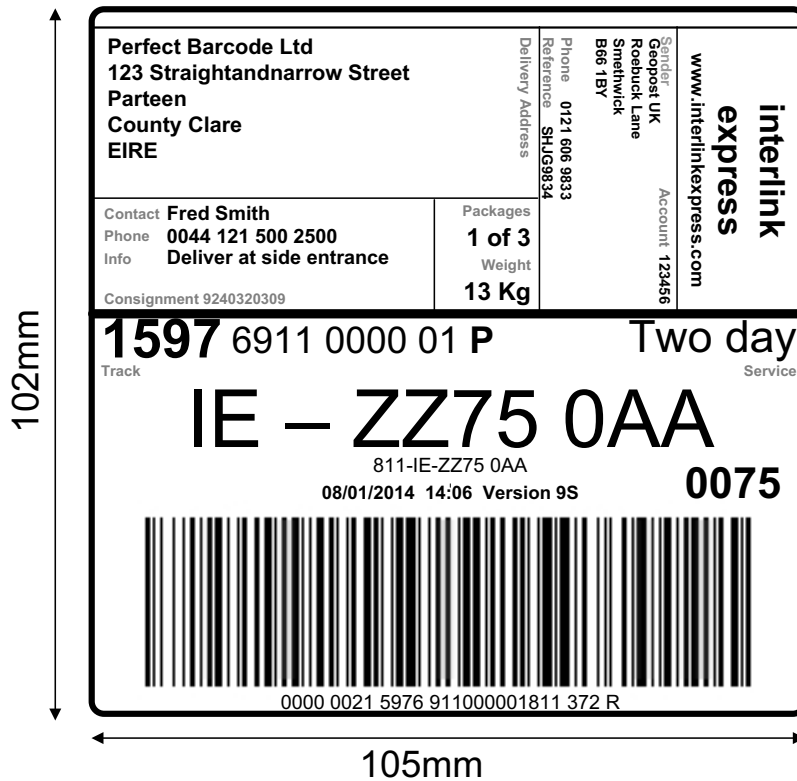
<i>Field Name</i>	<i>Mandatory</i>	<i>Number of Characters</i>	<i>Text Height (20% Tolerance)</i>	<i>Example</i>
Carrier Text		Variable	1.5mm	“Responsible Delivery – CO ₂ Neutral”
SHIPMENT ZONE				
Delivery Address	✓	35 (5 Lines)	2.5mm bold	Perfect Bar Code LTD
Contact		20	2mm	Fred Smith
Phone		20	2mm	0044 121 500 2500
Info		25 (2 Lines)	2mm	Deliver to Side Entrance
Packages	✓	10	2.5mm	1 of 3
Weight	✓	6	2.5mm	13kg
Sender		35 (5 Lines)	1.5mm	Geopost UK
Account	✓	8	1.5mm	1234567
Phone		20	1.5mm	0121 606 9833
Reference		25	1.5mm	SHJG9834
Consignment Number	✓	10	2mm	8110000019
Origin Business Unit	✓	Variable	-	INTERLINK EXPRESS www.interlinkepress.com
ROUTING TEXT ZONE				
Parcel Tracking No	✓	15	6mm bold (4 digits) 4mm (10 digits) 4mm bold (1 digit)	1597 6911 0000 01P
Service Text	✓	18	4mm	Next Day
Destination Text (Country + Postcode)	✓	12	Country - 9mm bold Postcode – 9mm bold	“ GB – B66 1BY ” or “ IE ” (For Eire)
Service Code / Country / Destination Postal Code	✓	14	2mm	812-GB-B66 1BY
Label Origin	✓	35	1.5mm	08/01/2014 16:33 Ver: 9S
Local Flag	✓	5	4mm	LOCAL
Interlink Delivery Depot	✓	4	6mm bold	1528
BAR CODE ZONE				
Code 128 Bar Code	✓	-	See barcode metrics	
Bar Code Text	✓	28	2mm	

The text size is dependent on the font capabilities of the label printer so a 20% tolerance is allowed. The label text size proportions must be maintained to ensure visual compatibility. The specification label examples use “Arial Narrow” font.



NOTE: A quality line must be incorporated in the label (thick solid line) between the shipping zone and the routing zone. The example below has a quality line above the tracking number and service text (Two Day).

Southern Ireland (EIRE) Shipping



Pseudo Postcodes

When sending to Southern Ireland the following postcodes should be used on the label and within the end of day manifest file & ZZ75 0 should be used to lookup the available services from the Geogaz table.

Southern Ireland - ZZ75 0AA

Please note that the following Pseudo postcodes are only used within the barcode data string and eye readable beneath the 28 digit barcode.

Southern Ireland - 0000002



Country code for EIRE is 372

As the postcode is purely numeric, a subset change should be implemented after the first digit of the postcode to pair the remaining numeric digits together to make a more effective barcode output. See below the barcode structure.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
e.g.	%	0	0	0	0	0	0	1	1	5	5	0	1	9	9	9	0	0	6	5	7	6	8	1	1	3	7	2
Subset	B	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Field	%	P	P	P	P	P	P	P	T	T	T	T	T	T	T	T	T	T	T	T	T	T	S	S	S	C	C	C

Channel Island Shipping



WARNING: All channel island deliveries must be accompanied by invoices

See below the Channel Island postcode areas requiring an invoice:

JE = Jersey

GY

=

Guernsey

DAY-END DATA FILES (MANIFEST)

The Data Files

At end of day, the customer must transmit information to GeoPost detailing the packages sent that day.

The file(s) are comma-separated and text fields must be protected by encapsulation in “double-quotes” where they may contain separators such as commas, brackets, apostrophes etc.

NOTE: We use character encoding set ISO 8859-1, please ensure you use the same character encoding scheme otherwise data processing issues maybe encountered.

Filename Convention

File Name: aaaaaaaaa-nnn.ddd

where: aaaaaaaa represents the Authorisation Key
 nnn the Upload Number per day (starting from 001)
 ddd the Ordinal date (day number of the year).

This file contains the following record types:

- 60** File Header
- 61** Customer Consignment Shipment
- 62** Parcel (Repeated per parcel)
- 68** Tokens – Systems details for auditing purposes
- 69** File Trailer

Data Archive

NOTE: Customers **must** archive manifest data files for disaster recovery purposes, and it is advisable to recreate the data files on request in case of data loss.

Data Transmission

The files are to be transmitted to Geopost by FTP communication as the parcels leave site.



Type 60 File Header

Fields with the Example highlighted are constant values.

Field No.	Field Name	Format	Mandatory	Notes	Example
1	Record Type	2N	✓	Constant Value	60
2	Business Unit	2N	✓	Constant Value	02
3	Interlink Express A/c Number	1N - 8N	✓	Constant Value	1234567
4	Reserved				Leave Blank
5	File Creation Date	DD/MM/YYYY	✓	System Date	08/01/2014
6	File Creation Time	HH:MM	✓	System Time	15:32
7	Transmission Number	1N - 5N	✓	File reference number (Usually a serial counter)	00005
8	Software Type	3A	✓	Constant Value	EDI
9	Client Export Path	> 0A		Source pathname on client machine	Z:\export\00000284-001.008
10	Company Name	> 0A	✓	Constant Value	Perfect Barcode Ltd
11	Export Variant	> 0A	✓	Constant Value	'IATA'

60,02,123456,,08/01/2014,15:32,00005,EDI,Z:\export\00000284-001.008,Perfect Barcode Ltd,IATA

Type 61 Shipment Record (Consignment)

1 record for each destined to the same address on a given day

Fields with the Example highlighted are constant values.

Field No.	Field Name	Format	Mandatory	Notes	Example
1	Record Identifier	2N	✓	Constant Value	61
2	Consignment Number	10N	✓	9 Digit Con Number + Check Digit	8110000019
3	Network Service	2N	✓		12
4	Weight	1N.1N - 4N.1N	✓	Kilos	2.0 (Total weight for consignment)
5	Insurance	1A	✓	"Y"/"N"	"N" Always
6	Total Parcels in Con.	1N-3N	✓		1
7	Post Code	5AN - 7AN + Space	✓	Must be a valid Postcode	B66 1BY, ST16 3SA
8	Reserved				Leave Blank
9	Receiver's Name	1A - 35A	✓		"Perfect Barcode Ltd"
10	Receiver's Street	1A - 35A	✓		"123 StraightandNarrow Street"
11	Receiver's Suburb	1A - 35A			""
12	Receiver's Town	1A - 35A			""
13	Receiver's City	1A - 35A	✓		"Smethwick"
14	Receiver's County	1A - 35A			"West Midlands"
15	Country Code	2A (IATA codes)			"GB" or "IE" or blank
16	Account Number	1N - 7N	✓	Constant Value	"123456"
17	Senders Ref 1	1A - 25A			"SHJG9634"
18	Senders Ref 2	1A - 25A			"1122334455-112"
19	Senders Ref 3	1A - 25A			"9988776655-



					1100299”
20	Additional Information	1A – 50A			“Deliver at side entrance”
21	Reserved				Leave blank
22	Reserved				Leave blank
23	Reserved				Leave blank
24	Reserved	See Homecall specification for further details.			Leave blank
25	Reserved				
26	Reserved				
27	Reserved				
28	Reserved	See International specification for further details.			Leave blank
29	Reserved				
30	Reserved				
31	Reserved				
32	Reserved				
33	Reserved				
34	Reserved	See Timed Window specification for further details			Leave blank
35	SMS Phone number	1A – 20A			07785382999
36	Email address	1A – 50A			Test@gmail.com
37	Reserved	See Reverse It specification for further details.			Leave blank
38	Reserved				
39	Reserved				Leave blank
40	Reserved				Leave blank
41	Collection Name	1A - 35A	✓		Geopostuk
42	Collection Street	1A - 35A	✓		Roebuck Lane
43	Collection Suburb	1A - 35A			
44	Collection Town	1A - 35A	✓		Smethwick
45	Collection City	1A - 35A	✓		Birmingham
46	Collection County	1A - 35A			
47	Collection Post Code	1A1N 1N2A / 1A2N 1N 2A / 1A1N1A 1N2A / 4N / 5N	✓		B66 1BY
48	Collection Country Code	2A	✓		GB
49	Collection Telephone				
50	Collection Contact Name				
51	Shipper’s VAT No	16N			
52	Receiver’s VAT No	16N			
53	Reason for Export	1A – 50A			
54	Invoice Type	1N – 2N			
55	Data Direction	2A-3A	✓	OUT	OUT
56	Reserved				Leave Blank
57	Back Door Code	3A		Only used for back door scan purposes	DSP / CSP
58	Receivers Name	1A-35A			Fred Smith
59	Receivers Telephone	1N-20N			0044 121 500 2500
60	Receivers E-Mail	1A-50A			Test@gmail.com

61,15976911000001,12,2.0,N,1,B66 1BY,,"Perfect Barcode Ltd ","123 StraightandNarrow Street",,,,,,"Smethwick", "West Midlands",,"123456"," SHJG9834","1122334455-112","9988776655-1100299"," Deliver at side entrance ",,,,,,,,,,,,,,07785382999, Test@gmail.com,,,,,Geopostuk,Roebuck Lane,, Smethwick, Birmingham,West Midlands,B66 1BY,GB,,,,,OUT,,, "Fred Smith",0044 121 500 2500,Test@gmail.com

Type 62 Parcel Record

1 record per parcel/label
Fields with the Example highlighted are constant values.

Field No.	Field Name	Format	Mandatory	Notes	Example
1	Record Identifier	2N	✓	Constant Value	62
2	Label Number	14N	✓	“1597” + “6” + 9 Digit Label Number	15976911000001
3	Reserved				Leave Blank
4	Reserved				Leave Blank
5	Reserved				Leave Blank
6	Reserved				Leave Blank
7	Reserved				Leave Blank
8	Reserved				Leave Blank
9	Barcode Content	28AN	✓	Parcel Barcode Content	%0B661BY15976911000001812826

62,159769110000001,,,,,,%0B661BY15976911000001812826

Tokens

Record Type 68 – Tokens
Fields with the Example highlighted are constant values.

Field No.	Field Name	Format	Mandatory	Notes	Example
1	Record Identifier	2N	✓	Constant Value	68
2	Token Description	20A	✓	Constant Value	PRODUCT
3	Token Value	20A	✓	Constant Value	EDI

68,PRODUCT,EDI

The File Footer

Record Type 69 – Footer
Fields below that are highlighted are constant values.

Field No.	Field Name	Format	Mandatory	Notes	Example
1	Record Identifier	2N	✓	Constant Value	69
2	Total No of Shipment Records	1N - 5N	✓	Must correspond with number of type 61 records	5
3	Total No. of Parcels Records	1N - 5N	✓	Must correspond with number of type 62 records	10

69,5,10
CHECK DIGIT CALCULATION ALGORITHMS

Code 128 Bar Code

The check digit is required for the 14 digit tracking number, the 9 digit consignment number and the 27 digit eye readable text below the barcode. The check digit allows anyone that needs to use the tracking and barcode details, e.g. re-labelling purposes, to verify the data that they key in is correct.

The check digit only needs to be visible as text on the label. The below Tool Kit link can assist with check digit calculations, see the full calculation on page 22-23.



Check Digit Calculator



28 & 14 Digit Check Digit Calculation

Function to create a Check digit for barcode strings using ISO 7064 Mod 37, 36

This calculation is also to be used to generate the Parcel Tracking No: check digit.

(Note that the prefix character “%” is NOT included)
Ensure any barcode alpha characters are uppercase.

Maintain two variables through the function:

V initialised to zero Reset for use on each character.

Cd initialised to 36 Running value maintained through the function.

Loop through all the characters of the string

For each character

V = ASCII value of the character – see below for table.

If V is between 48 and 57 inclusive (i.e. the character is numeric)
Then subtract 48 from V ($V = V - 48$)

If V is between 65 and 90 inclusive (i.e. the character is alpha)
Then subtract 55 from V ($V = V - 55$)

If V is any other value, the character is invalid and the function fails.

Add the resultant V to running value Cd

If Cd is greater than 36 then subtract 36 from Cd. ($Cd = Cd - 36$)

Multiply Cd by 2 (this value is now an even number between 2 and 72)

If Cd is greater than 36 then subtract 37 from Cd. ($Cd = Cd - 37$)

After all characters have been processed:

Subtract the resultant Cd from 37 ($Cd = 37 - Cd$)

If Cd equals 36 then reset Cd to Zero

If Cd is greater than 9 then add 55 to Cd ($Cd = Cd + 55$)

If Cd is NOT greater than 9 then add 48 to Cd ($Cd = Cd + 48$)

Cd is now the ASCII value of the required check digit – see below for table.

ASCII values table:

Numbers 0 to 9 have ASCII value 48 to 57
0=48, 1=49, ... 9=57

Letters A to Z have ASCII value 65 to 90
A=65, B=66, ... Z=90



9 Digit Consignment Number - Check Digit Calculation Algorithm

As well as detailed on the label the 9-digit consignment number is populated in Field 2 of the Type 61 record type together with its respective check-digit, making a 10-digit number.

The consignment number is stored in the type-61 record.

The check-digit is calculated with a different algorithm to the 28-digit code, as follows:

Operation 1

Divide the 9-digit number by 11

Operation 2

Round down the result of operation 1 to the nearest whole number

Operation 3

Multiply the result from operation 2 by 11

Operation 4

Subtract the result of operation 3 from the original 9 digit number.

If the result = 10 then replace it with 0

The result is the check digit.

Example

Bar Code Number: 893 708 281 ?

Operation 1: $893708281 / 11 = 81246207.36$

Operation 2: 81246207

Operation 3: $81246207 \times 11 = 893708277$

Operation 4: $893708281 - 893708277 = 4$

Check Digit = 4

Final 10-digit number = 893 708 281 4

