G1 Labels Product Specification

imagotag

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1 The G1 label family

The imago G1 electronic shelf label family offers high-quality display options, operating with a replaceable battery and thus working with any external power supply. The G1 red family is capable of changing all pixels to black, white or red.

The current line-up has display sizes from 1.6 inch to 7.4 inch. They may be used in landscape and portrait mode and can be customized with changeable front covers.

Caption	Display Resolution	Density (dpi)	Display Colors	Useable Pages	Active Display Area (mm)	Updates per Hour	Battery lifetime: 5 years with X updates per day
G1 1.6 red NFC	152 x 152	140	b/w/r	4	27.5 x 27.5	7500	tbd
G1 2.2 red NFC	212 x 104	111	b/w/r	4	24 x 48	8500	2
G1 2.6 red NFC	296 x 152	125	b/w/r	4	60 x 31	4000	2
G1 2.7	264 x 176	117	b/w	8	38 x 57	5000	4
G1 2.7 red NFC	264 x 176	117	b/w/r	4	38 x 57	4000	2
G1 4.4	400 x 300	113	b/w	4	90 x 67	3000	4
G1 4.4 red NFC	400 x 300	113	b/w/r	4	90 x 67	2000	2
G1 7.4	800 x 480	126	b/w	12	162 x 97	1000	4
G1 7.4 red NFC	800 x 480	126	b/w/r	4	162 x 97	600	2

1.1 Key Features

- 2.4 GHz bi-directional MSK proprietary radio
- Radio coverage: up to 25 meters
- Return Signal: yes
- 11 available communication channels
- Ultra-low power consumption
- Customer-replaceable battery
- Full graphical e-Ink display with paper-like readability
- Changeable and customizable front covers
- Super wide viewing angle (nearly 180 degrees)
- Flexible mounting options available
- May be used in landscape and portrait mode
- Fast response time (less than 15 seconds)
- Water resistant
- 128-bit AES encryption with secure key exchange
- Multiple pages support with preloading and fast page switching
- Integrated NFC tag as an option

2 Barcode Information

The labels come with a label ID (which is a unique identifier – just like a MAC address) and this label ID as a barcode on the display (and printed on the back of the label).

The label ID consists of 8 hexadecimal digits (0-9 / A-F). The first 2 digits identify the different label types, shown on the following table:

Caption	Label-ID
G1 1.6 red NFC	F1xxxxxx
G1 2.2 red NFC	A5xxxxxx
G1 2.6 red NFC	B6xxxxxx
G1 2.7	B3xxxxxx
G1 2.7 red NFC	B5xxxxxx
G1 4.4	C1xxxxxx
G1 4.4 red NFC	C4xxxxxx
G1 7.4	D1xxxxxx
G1 7.4 red NFC	D3xxxxxx

2.1 Serial Number

Depends on Producer (A)

2.1.1 Producer is 01

Part	Description	Format	Example	Comment	Source
A	Producer	2 alpha	01		Specified by imagotag once for each fab
B	Product family	3 alpha	G1B		Specified by imagotag in the product specification document
C	Product version	3 alpha	301		
D	Product revision	3 alpha	001	Incremented on every change of product specification	
-	Separator	"-"	-		Fixed
E	Internal	1 alpha	B	Internal	Calculated during production
F	Year	1 dec	4	4=2014, 5=2015,...	
G	Week	2 dec	10	Calendar week in current year (01-53)	
H	Weekday	1 dec	3		
I	Internal	5 dec	00060	Continuous Serial Number (Counter)	

Format: AABBBCCCDDD-EFGGHIIIII
Example: 01G1B301001-B410300060

2.1.2 Producer is not 01

Part	Description	Format	Example	Comment	Source
A	Producer	2 alpha	02		Specified by imagotag once for each fab
B	Product family	3 alpha	R22		Specified by imagotag in the product specification document
C	Product version	3 alpha	N01	N = with NFC	
D	Product revision	3 alpha	001	Incremented on every change of product specification	
-	Separator	"-"	-		Fixed
E	Year	1 alpha	E	E=2015, A=2010, B=2011,..	Calculated during production
F	Week	2 dec	13		
G	Internal	6 dec	000065	Continuous Serial Number (Counter)	

Format: `AABBBCCCDDD-EFFGGGGGG`
Example: `01G1B302001-E13000065`
Note:

- Calendar week date is calculated according to ISO 8601 (see http://en.wikipedia.org/wiki/ISO_week_date)

3.2.3 G1 2.6 (red)

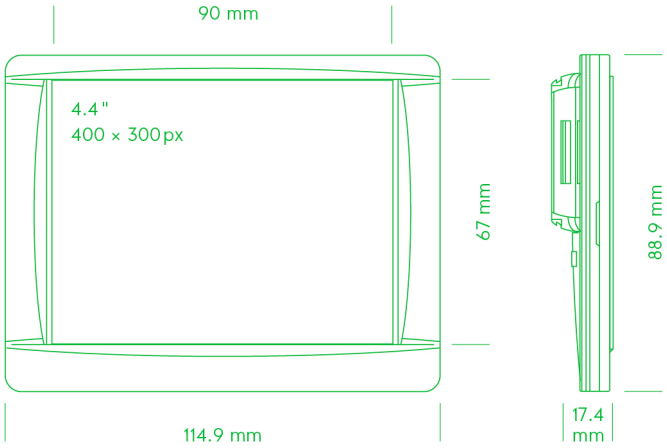
Outline (mm): 83.6 x 42.5 x 15.6
Weight: 45 g

3.2.4 G1 2.7 (red)

Outline (mm): 86.3 x 49.5 x 16.2
Weight: 50 g

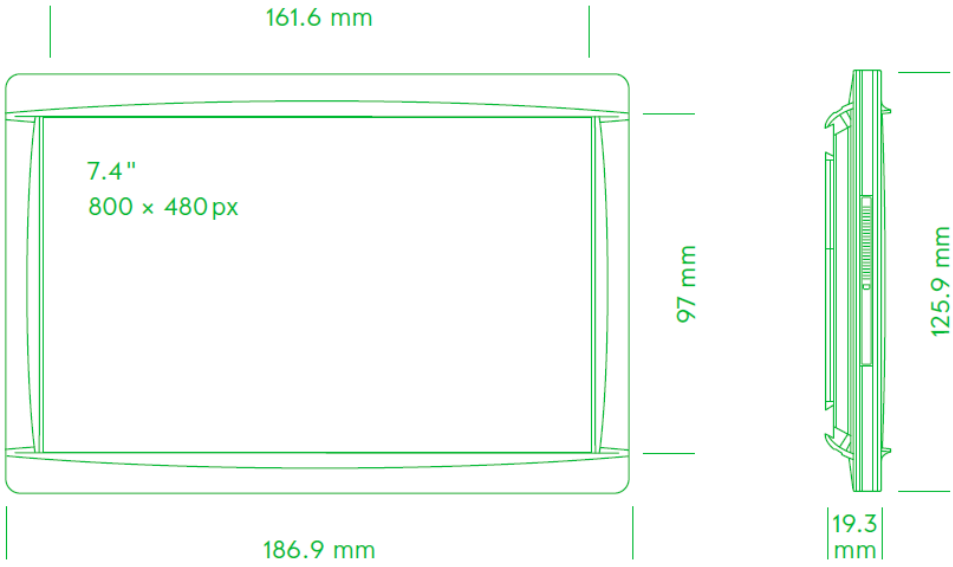
3.2.5 G1 4.4 (red)

Outline (mm): 114.9 x 88.9 x 17
Weight: 104 g



3.2.6 G1 7.4 (red)

Outline (mm): 186.9 x 125.9 x 19.3
Weight: 239 g



4 Electrical & RF Characteristics

4.1 Power and Current Consumption

The power supply are 1, 2 or 3 cell-button batteries. The following table will give you a short overview about all kinds of labels and their batteries.

Caption	Battery Type	Operating Voltage	Nominal capacity	Battery lifetime 5 years with X updates per day
G1 1.6 red NFC	1 x CR2450	3 V	550 mAh	tbd
G1 2.2 red NFC	2x CR2450	3 V	1100 mAh	2
G1 2.6 red NFC	2x CR2450	3 V	1100 mAh	2
G1 2.7	2x CR2450	3 V	1100 mAh	4
G1 2.7 red NFC	2x CR2450	3 V	1100 mAh	2
G1 4.4	2x CR2450	3 V	1100 mAh	4
G1 4.4 red NFC	3x CR2477	3 V	3000 mAh	2
G1 7.4	3x CR2477	3 V	3000 mAh	4
G1 7.4 red NFC	3x CR2477	3 V	3000 mAh	2

Note: battery lifetime can vary depending on the operating conditions of the ESLs (temperature, radio usage etc...) see *Battery lifetime* on page 19

4.2 Transmission power

Each ESL has got a transmission power of ≤ 10 dBm (according to the FCC certification).

14 Improper Use

Any use that is not mentioned in Section *Intended Use*, shall be deemed to be improper. Any damage which result from improper use, the operator will assumes liability.

The following usage is not allowed:

- Never dismantle the product because except battery there is no component which could be changed by someone who is not qualified.
- Don't drop it.
- Keep it away from water.
- Strictly avoid direct contact with groceries.
- Don’t use the label with defective parts.
- Don’t use the label with spare parts and accessories which are not examined and approved by the imagotag GmbH.
- Unauthorized changes or modifications to the electronic label and their components without the consent of imagotag GmbH are not allowed.
- Don't heat, recharge or bend battery.
- We take no responsibility for stolen labels without encryption.
- Keep away batteries from children.
- Don't throw defective batteries into the dustbin. Give them to a reprocessing company.
- Don't throw ESL into the dustbin. Give them to a reprocessing company.
- Contact imagotag GmbH for more details about this process.