



The purpose of this guideline is to define the optimal transponder placement within the media such that the media can completely printed without use of the programmable encode position command.

Printer/ Encoder and Firmware

- Note that inlay placement within media may differ for each printer/ encoder model. The guidelines contained within this document are relevant only for the listed printer/ encoder(s).
- Guidelines are established using the latest firmware available for the printer/ encoder. Please ensure that the latest firmware is being utilized to get the optimum encoding performance. Firmware downloads may be found at www.zebra.com.

Transponder Orientation

- Inlay orientation is critical to ensure proper encoding.
- Transponder picture shown in guideline is how it must be inserted in into the media.
- Picture shows the transponder orientation as seen through the facestock and media feed direction down.

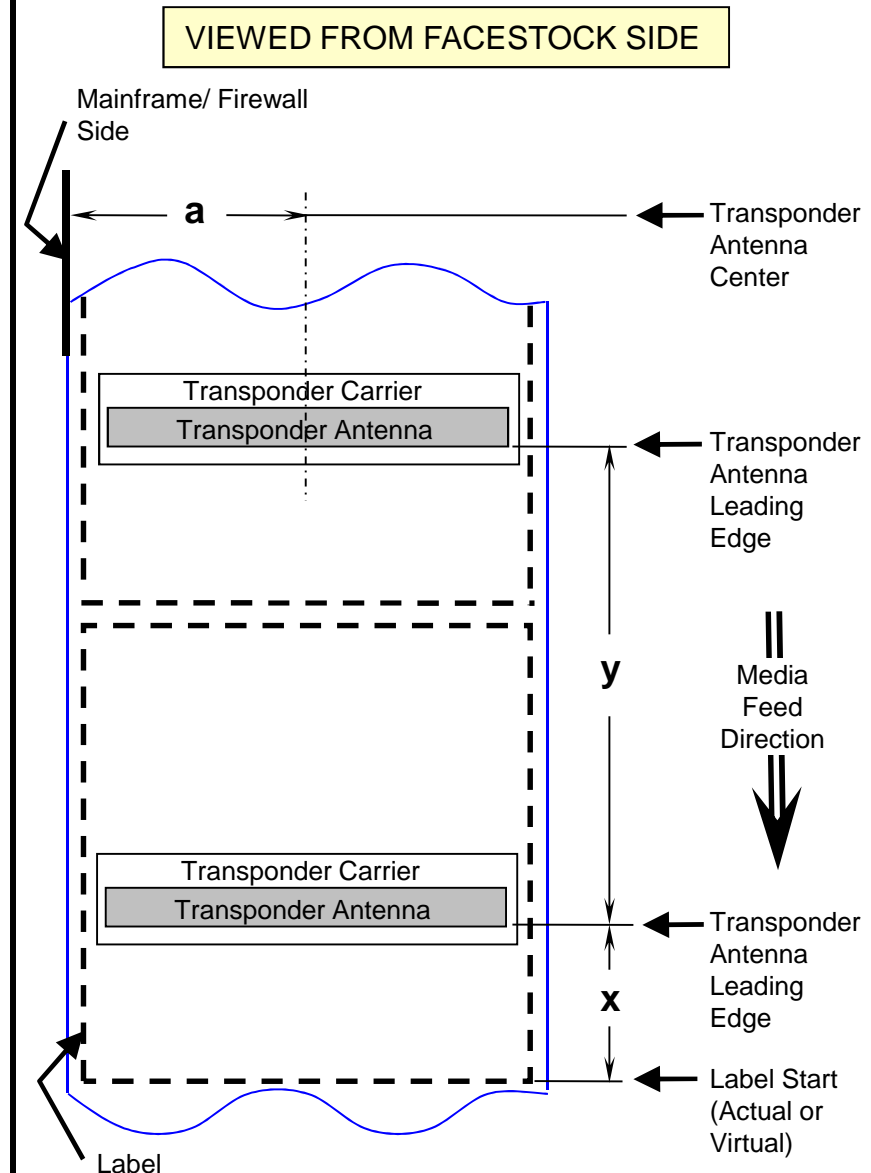
Label Construction

- Zebra printer encoders are generally ran with a standard 1/8" gap between labels without a black mark
- If transponder placement guidelines to not allow for transponder to properly fit within the wanted label size, then a black mark may need to be introduced to create a "virtual" label to ensure proper encoding. This will usually also shift the label home position and therefore print formats may have to also be adjusted.
- The "Label Start" is defined by one of three different methods: 1) The physical leading edge of a label, 2) The leading edge of a black mark, or 3) The leading edge of a notch (Black mark and notch dimension requirements are outlined printer specifications).

Transponder Antenna Placement Dimensions

- There are three dimensions that are critical in determining transponder placement as shown in the schematic to the right and as explained below

Dimension	Definition	Explanation
a	Printer Mainframe/ Firewall (or Liner Edge) to Transponder Antenna Center	Coupling with the transponder changes across the width of the printer and can cause x and y dimensions to vary. Please note that dimension is always to the antenna center, not the chip or transponder carrier. Dimension generally given with a +/- 3mm tolerance.
x	Label Start to Transponder Antenna Leading Edge	This dimension ensures coupling with the transponder in the current label to be printed without use of programmable encode position command. Please note that dimension is always to the antenna leading edge, not the chip or transponder carrier. Dimension generally given with a +/- 3mm tolerance.
y	Transponder Antenna Leading Edge to Transponder Antenna Leading Edge Pitch	This dimension ensures coupling with only the transponder in the current label. Please note that dimension is always to the antenna leading edge, not the chip or transponder carrier. Dimension generally given as a ≥ 3 mm minimum distance.



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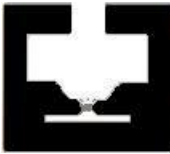

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Zebra R110PAX4 UHF -R0

Model Number: R1XEXXX-XXXXX

Guideline #	Revision Date	Protocol	Transponder				Transponder Placement (mm)				Printer/ Encoder Settings		
			Manufacturer	Manufacturer Part Number	Orientation		a		x	y	Tag Type	Read Power	Write Power
					Option	Viewed through facestock/ Machine direction down	Option	(± 3mm)	(± 3mm)	(I)			
00001	02/08/2008	EPC C1G2/ ISO 18000-6C	Alien	ALN-9540	A		A	52	26	51	Gen2	Low	Low
00002	02/08/2008	EPC C1G2/ ISO 18000-6C	Avery	AD-222	A		A	52	24	51	Gen2	Low	Low
00003	02/08/2008	EPC C1G2/ ISO 18000-6C	Rafaltec	3000852 (Version 2)	A		A	52	31	51	Gen2	Low	Low
00004	02/26/2008	EPC C1G2/ ISO 18000-6C	Alien	ALN-9554	A		A	52	13	54	Gen2	Low	Low
00005	02/26/2008	EPC C1G2/ ISO 18000-6C	Alien	ALN-9534	A		A	27	14	63	Gen2	Low	Low
00006	07/20/2008	EPC C1G2/ ISO 18000-6C	Alien	ALN-9562	A		A	40	19	51	Gen2	Low	Low

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					Option	Viewed through facestock/ Machine direction down	Option	(± 3mm)	(± 3mm)	(\bar{l})			
00007	09/25/2008	EPC C1G2/ ISO 18000-6C	Alien	ALN-9640	A		A	51	29	51	Gen2	Low	Med
00008	09/25/2008	EPC C1G2/ ISO 18000-6C	Alien	ALN-9662	A		A	40	15	51	Gen2	Low	Med
00009	10/23/2008	EPC C1G2/ ISO 18000-6C	Avery	AD-224	A		A	51	35	51	Gen2	Low	Low
00010	11/19/2008	EPC C1G2/ ISO 18000-6C	Avery	AD-223	A		A	51	24	51	Gen2	Low	Low
0011	1/26/2010	EPC C1G2/ ISO 18000-6C	Smartrac	3001490 3001488	A		A	51	23	51	Gen2	Low	Low
					B		A	51	34	51	Gen2	Low	Low

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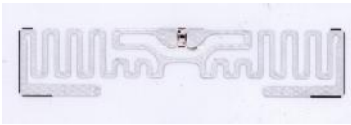

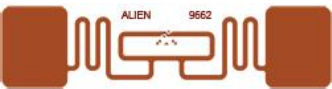


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0012	08/06/2009	EPC C1G2/ ISO 18000-6C	Avery	AD-230	A		A	38	18	51	Gen2	Low	Low
					B		A	38	12	51	Gen2	Low	Low
0013	02/02/2010	EPC C1G2/ ISO 18000-6C	Alien	ALN-9640-F	A		A	51	25	38	Gen2	Low	Low
0014	02/02/2010	EPC C1G2/ ISO 18000-6C	Alien	ALN-9662-F	A		A	38	20	38	Gen2	Low	High
0015	11/01/2010	EPC C1G2/ ISO 18000-6C	Smartrac	3001858 3001871	A		A	38	21	38	Gen2	Low	Low
					B		A	38	17	38	Gen2	Low	Low

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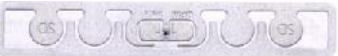


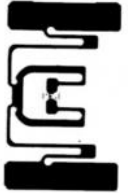
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					Option	Viewed through facestock/ Machine direction down	Option	(± 3mm)	(± 3mm)	(í)			
0016	11/04/2010	EPC C1G2/ ISO 18000-6C	Smartrac	3001885	A		A	51	34	51	Gen2	Low	Low
					B		A	51	23	51	Gen2	Low	Low
0017	02/17/2011	EPC C1G2/ ISO 18000-6C	Smartrac	3001593 Spline	A		A	51	35	51	Gen2	Low	Low
0018	11/02/2012	EPC C1G2/ ISO 18000-6C	Alien	ALN-9740	A		A	51	25	51	Gen2	Low	Low
0019	11/29/2012	EPC C1G2/ ISO 18000-6C	Avery	AD-380	A		A	25	17	62	Gen2	Low	High

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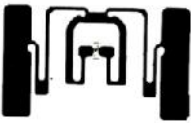



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0020	11/30/2012	EPC C1G2/ ISO 18000-6C	Avery	AD-227	A		A	51	24	51	Gen2	MED	MED
0021	02/20/2013	EPC C1G2/ ISO 18000-6C	Avery	AD-380iL	A		A	25	21	51	Gen2	LOW	MED
0022	09/13/13	EPC C1G2/ ISO 18000-6C	Trace Tech ID Solutions	TE14	A		A	55	36	51	Gen2	LOW	LOW
0023	09/13/13	EPC C1G2/ ISO 18000-6C	VALID	VLID2424-CTA30012	A		A	17	24	51	Gen2	HIGH	HIGH
0024	7/17/2015	EPC C1G2/ ISO 18000-6C	Alien	ALN-9762	A		A	41	20	38	Gen2	LOW	MED

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