RFID TRANSPONDER PLACEMENT / POWER GUIDELINES

Zebra RZ400 UHF –R1

Model Number: RZ400-XXXX-XXXRX

The purpose of this guideline is to define the optimal transponder placement within the media such that the media can be 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

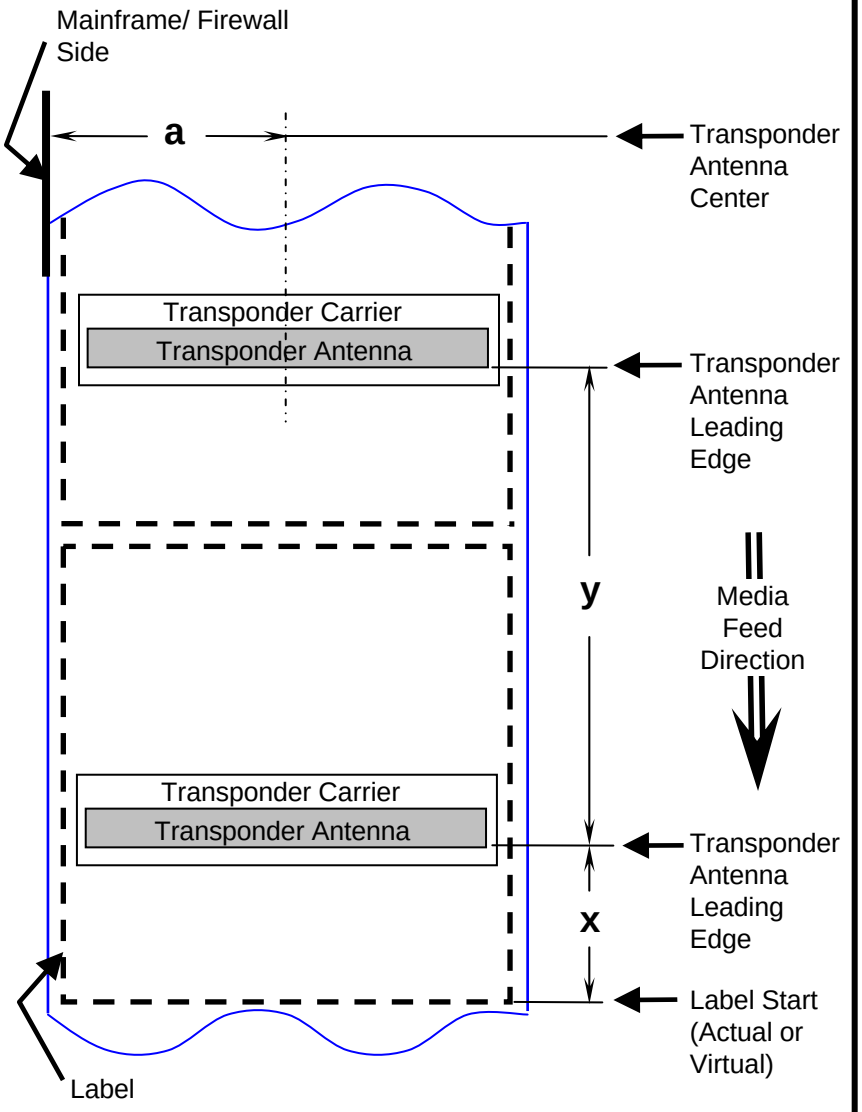
- Zebra printer encoders are generally ran with a standard 1/8" gap between labels without a black mark
- If transponder placement guidelines to not allow for transponder to properly fit within the wanted label size, then a black mark may need to be introduced to create a "virtual" label to ensure proper 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.

VIEWED FROM FACESTOCK SIDE



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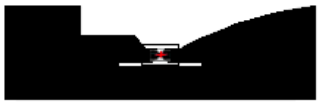
Guideline #	Revision Date	Protocol	Transponder				Transponder Placement (mm)				Printer/ Encoder Settings		
			Manufacturer	Manufacturer Part Number	Orientation		a		x	y	Tag Type	Read Power	Write Power
					Option	Viewed through facestock/ Machine direction down	Option	(± 3mm)	(± 3mm)	(≥)			
00001	05/16/2008	EPC C1G2/ ISO 18000-6C	Alien	ALN-9540	A		A	52	14	51	Gen2	21	21
00002	05/16/2008	EPC C1G2/ ISO 18000-6C	Avery Dennison	AD-222	A		A	52	22	51	Gen2	24	24
00003	05/16/2008	EPC C1G2/ ISO 18000-6C	Raflatac	3000852 (Version 2)	A		A	52	19	51	Gen2	21	21
00004	07/11/2008	EPC C1G2/ ISO 18000-6C	Alien	ALN-9554	A		A	52	17	51	Gen2	15	15
00005	07/11/2008	EPC C1G2/ ISO 18000-6C	Alien	ALN-9562	A		A	40	15	51	Gen2	15	24

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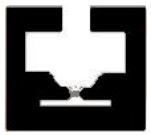
			Manufacturer	Manufacturer Part Number	Orientation		a		x	y	Tag Type	Read Power	Write Power
					Option	Viewed through facestock/ Machine direction down	Option	(± 3mm)	(± 3mm)	(≥)			
00006	07/11/2008	EPC C1G2/ ISO 18000-6C	Raflatac	3000820 (Version 2)	A		A	52	10	51	Gen2	21	21
00007	07/11/2008	EPC C1G2/ ISO 18000-6C	Avery	AD-811	A		A	25.4	20	51	Gen2	18	21
00008	07/11/2008	EPC C1G2/ ISO 18000-6C	Avery	AD-821	A		B	40	18	51	Gen2	12	15
00009	07/25/2008	EPC C1G2/ ISO 18000-6C	Avery	AD-431	A		A	51	20	51	Gen2	18	27
00010	07/25/2008	EPC C1G2/ ISO 18000-6C	Alien	ALN-9534	A		B	27	15	51	Gen2	12	18
00011	07/25/2008	EPC C1G2/ ISO 18000-6C	Alien	ALN-9529	A		A	27	10	51	Gen2	24	24

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			Manufacturer	Manufacturer Part Number	Orientation		a		x	y	Tag Type	Read Power	Write Power
					Option	Viewed through facestock/ Machine direction down	Option	(± 3mm)	(± 3mm)	(≥)			
00012	8/01/2008	EPC C1G2/ ISO 18000-6C	Raflatac	3000852 (Version 3)	A		A	51	15	25	Gen2	15	18
00013	3/31/2009	EPC C1G2/ ISO 18000-6C	Avery	AD-223	A		A	51	24	25	Gen2	21	21
00014	3/31/2009	EPC C1G2/ ISO 18000-6C	Alien	ALN-9640	A		A	51	14	25	Gen2	21	24
00015	03/31/2009	EPC C1G2/ ISO 18000-6C	Alien	ALN-9662	A		A	40	7	25	Gen2	18	24

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