IEEE 802.11
Wireless Access Method and Physical Layer Specifications

Title: **Additional requirements for appendix G in the IEEE Requirements Document IEEE P802.11-92/01**

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Abstract: The following are additional requirements for future applications within Retail environments. In addition more information is provided related to the information provided in appendix G on page 63 and 64.

APPENDIX G: RETAIL

Electronic shelf label applications include:

. broadcast of small data packets to multiple shelflabel devices
. total refresh of all devices on weekly basis
. possibility to send datapackets to 20% of the shelflabels at any   time during the day
. max number of esl 60.000
. max record size 75 Bytes per device
. user response delay max 15 sec. for daily updates
. transfer delay max. x min for weekly updates

Electronic bulletin board

. Bulletin boards can be located at each department and at the   entrance of the store
. Various messages can be displayed (promotions / take away
  messages etc.)
. Max number of devices 50
. Record size 200 Bytes
. User response delay < 1 sec.

Scales

. PLU download to scales weekly (Mostly done overnight)
. Price information any time during the day.
. User response delay 15 seconds
. Per scale max 500 PLU's
. Network area clustered
. number of terminals 60 / ha

Self scanning devices connected to a customer trolley
. Customer scans item before putting into the trolley
. Device on trolley where PLU file is resident
. At the check out the transaction will be finalized by
  transmitting registered items to a server.

	ELS	ELECTRONIC BULLETIN BOARD	SCALES	SELF SCANNING
Peak Transaction	2/day 1500 items	2/min	1/min for 5 items	1/3 min for 50 items
# of enq/responses per transaction	-	-	6	51
network area	5000/ha	30/ha	clustered	
user response delay required desired	< 15 sec < 8 sec	<3 sec <1 sec	<5 sec <1 sec	<5 sec <2 sec
message size per transaction	75 bytes per device 12000x75 = 8K	200 bytes	75 bytes	2KB
number of terminals MSDU size	60.000 75 bytes	50 200 bytes	60/HA 75 bytes	20/HA 2KB
MSDU loss rate	-2 10	-2 10	-3 10	-3 10
Station speed Destination distr. dimension	fixed 100%	<2 m/s 100%	<2 m/s 100%	>2m/s 100%

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	Department store	Discount	Supermarket checkout
peak transaction		1/min for 16 items	1/3 min for 100 items
number of enq/responses etc.		17	102
user response delay desired required	500 msec 1 sec	500 msec 750 msec	50 msec 200 msec
Message size per transaction sent to POS total	120 240	120 240	60 85
number of terminals	60	50	75

Terminal downloads requires 512 Kbytes/10 sec.

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- Data security and integrity are vital.
- Downloaded software could be as big as 16 Mbytes
- Subsecond respons on the screen required by all customers.

	Financial POS	Program Download
Service initiation time	100 msec	100 msec