

The table below shows the extract from the CardCracker logs of all the RRP timings.

	<b>Honest Card</b>	<b>Relayed transactions</b>
<p>Honest Paypass-RRP</p>	<pre>*****RRP_COUNTER:00***** RRP_TIME_TAKEN = CEE0 AS_BCD = 52960 MEASURED_RRP_PROCESSING_TIME = 01E7 AS_BCD = 487 *****RRP_COUNTER:00***** RRP_TIME_TAKEN = 98FD AS_BCD = 39165 MEASURED_RRP_PROCESSING_TIME = 015D AS_BCD = 349</pre>	<pre>*****RRP_COUNTER:00***** RRP_TIME_TAKEN = 04542E AS_BCD = 283694 MEASURED_RRP_PROCESSING_TIME = 0AEA AS_BCD = 2794 *****RRP_COUNTER:01***** RRP_TIME_TAKEN = 086440 AS_BCD = 549952 MEASURED_RRP_PROCESSING_TIME = 1551 AS_BCD = 5457 *****RRP_COUNTER:02***** RRP_TIME_TAKEN = 1A268E AS_BCD = 1713806 MEASURED_RRP_PROCESSING_TIME = 42C8 AS_BCD = 17096 MESSAGE = RELAY_RESISTANCE_TIME_LIMITS_EXCEEDED MESSAGE = RELAY_RESISTANCE_TIME_THRESHOLD_EXCEEDED</pre>

<p>Rogue Paypass-RRP</p>	<pre>*****RRP_COUNTER:00***** RRP_TIME_TAKEN = C036 MEASURED_RRP_PROCESSING_TIME = 01C2 *****RRP_COUNTER:01***** RRP_TIME_TAKEN = 8178 AS_BCD = 33144 MEASURED_RRP_PROCESSING_TIME = 0121</pre>	<pre>*****RRP_COUNTER:00***** RRP_TIME_TAKEN = 05C2D6 MEASURED_RRP_PROCESSING_TIME = 0E95 *****RRP_COUNTER:01***** RRP_TIME_TAKEN = 05305C MEASURED_RRP_PROCESSING_TIME = 0D1E *****RRP_COUNTER:02***** RRP_TIME_TAKEN = 052985 MEASURED_RRP_PROCESSING_TIME = 0D0D MESSAGE = RELAY_RESISTANCE_TIME_LIMITS_EXCEEDED MESSAGE = RELAY_RESISTANCE_TIME_THRESHOLD_EXCEEDED</pre>
<p>Honest PayBCR</p>	<pre>*****RRP_COUNTER:00***** RRP_TIME_TAKEN = 021B10 MEASURED_RRP_PROCESSING_TIME = 053A *****RRP_COUNTER:01***** RRP_TIME_TAKEN = 01C138 MEASURED_RRP_PROCESSING_TIME = 0454</pre>	<pre>*****RRP_COUNTER:00***** RRP_TIME_TAKEN = 080E80 AS_BCD = 528000 MEASURED_RRP_PROCESSING_TIME = 1476 *****RRP_COUNTER:01***** RRP_TIME_TAKEN = 092F90 AS_BCD = 602000 MEASURED_RRP_PROCESSING_TIME = 175A *****RRP_COUNTER:02***** RRP_TIME_TAKEN = 26CD98 AS_BCD = 2543000 MEASURED_RRP_PROCESSING_TIME = 632C MESSAGE = RELAY_RESISTANCE_TIME_LIMITS_EXCEEDED MESSAGE = RELAY_RESISTANCE_TIME_THRESHOLD_EXCEEDED</pre>

Rogue Paypass-RRP	<pre>*****RRP_COUNTER:00***** RRP_TIME_TAKEN = 01FB00 MEASURED_RRP_PROCESSING_TIME = 04EA *****RRP_COUNTER:01***** RRP_TIME_TAKEN = 01C138 AS_BCD = 115000 MEASURED_RRP_PROCESSING_TIME = 0454</pre>	<pre>*****RRP_COUNTER:00***** RRP_TIME_TAKEN = 0B42D0 MEASURED_RRP_PROCESSING_TIME = 1CAA *****RRP_COUNTER:01***** RRP_TIME_TAKEN = 052080 AS_BCD = 336000 MEASURED_RRP_PROCESSING_TIME = 0CF6 *****RRP_COUNTER:02***** RRP_TIME_TAKEN = 0687E0 AS_BCD = 428000 MEASURED_RRP_PROCESSING_TIME = 108E MESSAGE = RELAY_RESISTANCE_TIME_LIMITS_EXCEEDED MESSAGE = RELAY_RESISTANCE_TIME_THRESHOLD_EXCEEDED</pre>
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*Table 1: RRP timings from CardCracker logs*

Recall:

RRP\_COUNTER is the round of RRP-processing for which we tool the timings.(The EMV C-2 Kernel specification for Mastercard transactions allows RRP processing to repeat twice, if it has failed the first time, hence this counter.)

RRP\_TIME\_TAKEN is the time in microseconds from when the timer is started before the ERRD command and when it is stopped immediately after,

MEASURED\_RRP\_PROCESSING\_TIME is the “Measured Relay Resistance Processing Time”, as specified in the EMV C-2 Kernel specification for Mastercard transactions.