



BPAY QR Code Specification For Billers

For BPAY Payments and BPAY View Registrations

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1. BPAY QR Code Specification

1.1 Introduction

This BPAY QR code specification for Billers sets out BPAY's use of QR codes to enable Billers to create QR codes and enable Payers to either make BPAY payments or register for the BPAY View service via their mobile banking application.

Benefits of QR codes are that they remove the need for Payers to enter the payment or registration data themselves, therefore saving time, and reducing errors. It also creates a unique solution for BPAY in terms of the integration of mobile banking applications and BPAY's service offerings.

An assumption has been made that BPAY QR Codes will be scanned by users utilising a mobile device application or mobile device website function provided by their financial institution and so identification of the data format by a generic reader is not required. Should the code be scanned with a generic scanner, a hyperlink to a BPAY landing page is to be encoded with an additional identifier to indicate the service the code relates to.

The position of each value is indicated by a numeric identifier in the code to separate the fields (rather than using maximum length of values).

No personal information not already visible on the bill from which the code is scanned is included in the QR Code.

The following three QR Code formats are available (Examples of codes appear in Section 1.3 Example BPAY QR Codes):

- BPAY payment QR Code:
`bpay.com/p 1=billercode 2=customerreferencenumber 3=amountdue 4=duedate`
- BPAY View Registration QR Code:
`bpay.com/v 1=billercode 2=bpayviewregistrationnumber 3=authfield1 4=authfield2 5= authfield3`
- QR code containing both BPAY payment AND BPAY View Registration details:
`bpay.com/b 1=billercode 2=customerreferencenumber 3=amountdue 4=duedate 5=bpayviewregistrationnumber 6=authfield1 7= authfield2 8= authfield3`

1.2 Field Definitions

The following definitions apply for the fields listed above. The BPAY and BPAY View fields are presented separately below, however for the combined approach simply combine all field definitions into one table (with Biller Code included only once). As shown in the examples, all fields are separated by numeric identifiers.



Note 1: Where a field is optional they need not be included in the encoded data (including the relevant numeric identifier/s).

Note 2: No fields require padding if shorter than the maximum length.

Field	Field Type and Constraints	Mandatory /Optional (M/O)	Usage/Comments
Domain	Equal to bpay.com/	M	Domain which will host instruction message should QR code be scanned using a generic reader
Service Identifier	Must equal one of: <ul style="list-style-type: none"> • p – BPAY Payment • v – BPAY View Registration • b – Both Payment and Registration data 	M	Enables identification of the relevant service by both the mobile banking application and the BPAY domain when determining the instruction message to display.

Table 1 – Domain and Service Identifier Fields. Used in all Codes

Field	Field Type and Constraints	Mandatory /Optional (M/O)	Usage/Comments
billercode	Numeric Max length 10	M	Biller’s BPAY Biller Code
customerreferencenumber	Numeric Max length 20	M	The reference number used by the Biller to identify their customer’s payment
amountdue	Amount Type Max length 13	O	The amount due for the particular bill or payment. Amount type so allowing for decimal point and requiring 2 digits representing cents
duedate	ddmmyyyy	M	The date the payment is due, NOT the payment date

Table 2 - BPAY Payments QR Code Field Definition

Field	Field Type and Constraints	Mandatory /Optional (M/O)	Usage/Comments
billercode	Numeric Max length 10	M	Billers' BPAY Biller Code
bpayview registrationnumber	Alphanumeric Max length 22	M	The number used by the Biller to uniquely identify the customer with regards to the BPAY View Registration
authfield1	Alphanumeric Max length 32	O	Additional authentication data optionally required by the Biller (though if authfield2 exists then authfield3 must exist)
authfield2	Alphanumeric Max length 32	O	Additional authentication data optionally required by the Biller (though if authfield3 exists then authfield2 must exist)
authfield3	Alphanumeric Max length 32	O	Additional authentication data optionally required by the Biller


Table 3 - BPAY View Registration QR Code Field Definition




The maximum size for each type of QR Code is:

- BPAY Payment only – 73 characters
- BPAY View Registration only – 153 characters
- BPAY Payment and BPAY View Registration Combined – 203 characters

1.3 Example BPAY QR Codes

Using the formats above and dummy data for each field we produce the following example codes (each image below is shown in this table in the original size produced by the tool used).

Description	Data to be encoded	QR Code
BPAY Payment Data Only	bpay.com/p 1=1234567890 2=12345678901234567890 3=123456.78 4=25092012	Default output size 

Description	Data to be encoded	QR Code
BPAY View Registration Data Only	bpay.com/v 1=1234567890 2=1234567890123456789012 3=This is a really long Auth Field 4=This is a really long Auth Field 5=This is a really long Auth Field	Default output size 
BPAY View Registration Data Only – NO AUTH FIELDS REQUIRED	bpay.com/v 1=1234567890 2=1234567890123456789012	Default output size 
BPAY Payment and BPAY View Registration Data Combined	bpay.com/b 1=1234567890 2=12345678901234567890 3=123456.78 4=25092012 5=1234567890123456789012 6=This is a really long Auth Field 7=This is a really long Auth Field 8=This is a really long Auth Field	Default output size 





Description	Data to be encoded	QR Code
BPAY Payment and BPAY View Registration Data Combined – NO AUTH FIELDS REQUIRED	bpay.com/b 1=1234567890 2=12345678901234567890 3=123456.78 4=25092012 5=1234567890123456789012	Default output size 

Table 4 - Example BPAY QR Codes

1.4 Reduced QR Code Sizes

The size of the QR Code should be such that it may be unobtrusively included within a variation of the current BPAY Payment details box required to be included on bills. This necessitates that the data to be encoded is minimized where possible.

Code	Reduced QR Code Size
BPAY Payment Only	Maximum Number of characters = 73 Proposed size between 14mm and 16mm 
BPAY View Registration Only	Maximum Number of characters = 153 Proposed size between 18mm and 20mm 
BPAY View Registration Only – NO AUTH FIELDS REQUIRED	Number of characters in example = 48 Proposed size between 12mm and 14mm 



<p>Combined Code</p>	<p>Maximum Number of characters = 203 Proposed size between 22mm and 24mm</p> 
<p>Combined Code – NO AUTH FIELDS REQUIRED</p>	<p>Number of characters in example = 98 Proposed size between 16mm and 18mm</p> 

Table 5 – Proposed Reduced QR Code Sizes

1.5 Delivery of QR Codes to Payers

QR Codes may be delivered to payers in a number of ways:

- Paper Bills:
The QR Code could be placed on the traditional paper bill issued by billers, included in the payments options and/or BPAY View Registration section of their Bill
- Email Bills:
Bills delivered by email could easily include the QR Code as the code is simply an image file which could be scanned by the payer off of the screen
- Electronic/Digital Bills:
Whether bills are retrieved from an online bill aggregator, digital mailbox, or other, the QR Code is easily integrated into the digital version of the bill delivered and scanned off of the screen by the payer
- Potential Future Developments:
Implementation of QR Code services enables future development of tools to take advantage of this functionality, such as a Small Business Mobile application which can generate QR Codes allowing businesses to request payment on site, for example.



1.6 General Process

The following general process for payment of a bill using BPAY (and screen shots) are included below for illustrative purposes. A similar process is followed for registration for BPAY View. The BPAY branding guidelines are the source of any specific requirements BPAY has with regards to presentation of front end materials referencing BPAY.

1. Biller includes QR code containing BPAY Payment data on their bill
2. Customer receives bill
3. Customer logs into mobile banking application or website using their mobile device
4. Customer accesses BPAY Payments section of application/website
5. Customer selects option to scan BPAY Payment details
6. Customer uses mobile device camera to scan QR code containing BPAY payment data
7. Financial institution mobile banking application or website decodes information in QR code and populates a BPAY Payment screen, including display of Biller Name based on the Biller Code read from the QR code, preventing user from being able to edit data, other than the amount field.
8. Customer submits payment data
9. BPAY Payments process proceeds as per normal

Sample Screen Shots for a BPAY Payment

Empty Form

QR Code Capture

Populated Form





1.7 Possible Exceptions Encountered

The following issues or deviations may be experienced during the processes listed above:

ID	Exception/Issue	Comments
E01	A user scans the code using a generic reader not the tool within the FI mobile banking application/website	QR code readers give the option of showing the information encoded before actioning as a security feature to avoid malicious QR codes. Users using a generic QR Code reader will be able to see all of the information in the QR code. However, the code only contains data already present on the bill, along with a hyperlink to a BPAY hosted page which will display a generic message to the user instructing them to scan the QR code using their Financial Institution's mobile banking application.
E02	A person other than the owner of the bill scans the QR code to access the details	<ul style="list-style-type: none"> • In the case of a generic reader, the user will be able to view the payment/registration data. However the data will be no more than is visible on the bill they scanned the code from. • In the case of Payment details and unauthorised use of the person's mobile banking app/site, they can pay another person's bill as they have the details on the bill, which the user assumedly has access to, as they are scanning the QR code. • In the case of BPAY View registration details and unauthorised use of the person's mobile banking app/site, they can submit a registration for another person's bill as they have the details on the bill, which the user assumedly has access to, as they are scanning the QR code.
E03	Credit Card Data stored on user's phone outside of the mobile banking application/site, for credit card Billers, if generic reader is used	A credit card Biller uses the credit card number as the CRN and perhaps BVRN. As a result the QR Code will include these details. The mobile banking application already maintains this same data. If a generic app is used it will store the details in its history. The Biller Institution's is responsible for any resulting issues encountered.
E04	Attempted payment is a first time payment by a customer for a Biller	FIs need to consider the impact of preventing first time payments to Billers not in a Payer's Biller address book if using a QR code. This is no different to the current user experience.

Table 6 - Potential Exceptions/Issues

2. Branding Requirements

This section provides updated guidelines for display of BPAY details on bills, where the Biller offers a BPAY QR Code for use in payments, BPAY View registration, or both combined.

NOTE: The QR codes within this section are provided for illustrative purposes of the proposed branding only, and may not successfully scan in a reader. For sample QR codes which scan successfully please refer to the earlier sections of this document.

2.1 BPAY Payment Only

2.1.1 Biller Accepts Credit Cards



 **Biller Code: <XXXX>**
Ref: <XXXX XXXX XXXX>

Telephone & Internet Banking – BPAY®
Contact your bank or financial institution to make this payment from your cheque, savings, debit, credit card or transaction account. To use the QR code, use the reader within your mobile banking app.
More info: www.bpay.com.au

2.1.2 Biller Does Not Accept Credit Cards



 **Biller Code: <XXXX>**
Ref: <XXXX XXXX XXXX>

Telephone & Internet Banking – BPAY®
Contact your bank or financial institution to make this payment from your cheque, savings, debit or transaction account. To use the QR code, use the reader within your mobile banking app. More info: www.bpay.com.au

2.2 BPAY Payment and BPAY View Registration



 **Biller Code: <XXXX>**
Ref: <XXXX XXXX XXXX>

BPAY® this payment via Internet or phone banking or use the QR code reader within your mobile banking app.

BPAY View® – View and pay this bill using internet banking.

BPAY View Registration No.: <text including location on bill>
or use the QR code.



3. BPAY QR Code Certification

This section provides details of the process for printers/BSPs to obtain Certification by BPAY for use of BPAY QR Codes. The section commences with a summary of the anticipated changes introduced by implementing BPAY QR Codes, which provides context for the approach taken to certification.

3.1 Changes Introduced by QR Code Implementation

The following changes are required to support the implementation of QR Codes.

1. Biller must include updated branding on paper and electronic bills
2. QR Codes included on bills must conform to the format detailed in this Specification.

3.2 Testing Coverage

To ensure the items above are validated prior to implementation, the following approach to testing applies:

- a. Stand alone, to cater for those Billers who are already offering BPAY and BPAY View and are adding this functionality
- b. As an additional component of BPAY View certification for new Billers implementing QR Code functionality at the same time

3.3 Printer/BSP Certification

3.3.1 Branding

1. The current process for verification of branding on bills applies i.e. Biller Institution is responsible for every Biller. This must include branding as supplied on paper AND electronic bills.
2. BPAY will review the first Biller implementing at each BI in conjunction with the BI.

3.3.2 QR Codes

1. BPAY consults with the prospective Printer/BSP who intends to implement BPAY QR Code printing services on bills and provides them with the BPAY QR Code Specification (this document)
2. The Printer/BSP advises BPAY of the types of BPAY QR Codes they will be producing (BPAY Payments QR Codes and/or BPAY View Registration QR Codes)
3. BPAY confirms Printer/BSP understanding of testing requirements
4. The Printer/BSP produces the required sample QR codes outlined in Section 4 QR Codes for Printer/BSP Testing for each type of bill (paper and/or electronic).



5. The Printer/BSP provides required sample QR Codes to BPAY
6. BPAY undertakes review of supplied QR Codes and works through any issues with the Printer/BSP
7. Re-testing occurs as necessary
8. Once testing is completed successfully BPAY completes a Technical Certification Sign-Off form (see Section 5 Form QR-A – *BPAY QR Code Printer Certification Sign-Off*). The completed form is sent to the Printer/BSP
9. The Printer/BSP confirms implementation date to BPAY
10. The Printer/BSP implements developed services on agreed date and advises BPAY

3.3.3 Notes

1. Each printer is required to test with BPAY only once and provides approval for the Printer to produce QR Codes on paper and electronic bills for all Billers using that Printer.
2. If a Biller performs their own printing then that Biller must test with BPAY in the role of Printer.
3. To cater for various types of BPAY View billers, the printer testing for BPAY View QR Codes must test varying number of authentication fields and varying lengths of field data.
4. QR Codes must adhere to the optimum (reduced) size as detailed in the BPAY QR Code Specification.
5. Further assistance can be obtained by contacting the Biller's financial institution or the BPAY Customer Response Team (CRT) crt@bpay.com.au or 1800 146 201



4. QR Codes for Printer/BSP Testing

This section provides details of the QR codes to be generated by the printer/BSP for Certification by BPAY. The Printer provides each of the following for each type of code testing:

1. If offering BPAY Payments codes
 - a. A valid BPAY Payments QR Code containing an Amount Due
 - b. A valid BPAY Payments QR Code with no Amount Due supplied
2. If offering BPAY View codes:
 - a. A BPV code containing 0 additional Auth Fields
 - b. A BPV code containing 1 additional Auth Fields
 - c. A BPV code containing 2 additional Auth Fields (making field types different, such as address in one, numeric in another)
 - d. A BPV code containing 3 additional Auth Fields (making field types different, such as address in one, numeric in another, name in another)
3. If offering combined codes:
 - a. A combined code containing 0 additional Auth Fields
 - b. A combined code containing 1 additional Auth Fields
 - c. A combined code containing 2 additional Auth Fields (making field types different, such as address in one, numeric in another)
 - d. A combined code containing 3 additional Auth Fields (making field types different, such as address in one, numeric in another, name in another)



5. Form QR-A – BPAY QR Code Printer Certification Sign-Off

To: <Printer Name>

CC: BPAY Scheme Risk & Compliance Manager

This is to certify that above named Printer has completed all the requirements for Certification against the BPAY QR Code Specification (**Specifications**):

Certification Category	Date or N/A
Content encoded within all BPAY Payments QR Codes provided conforms to Specifications	
Content encoded within all BPAY View Registration QR Codes provided conforms to Specifications	
Content encoded within all Combined BPAY QR Codes provided conforms to Specifications	

Specification and Software	Version and Date
Version of BPAY QR Code Specification certified against	
Version of Printer QR Code solution certified	
Comments for any special requirements	

Date: _____

BPAY Certification Officer Name: _____

BPAY Certification Officer Signature: _____

Note 1: Certification is granted where, based on the information provided to BPAY, there is no reason apparent to BPAY why the Printer’s solution does not satisfy the requirements for provision of QR Code generation and/or printing services for BPAY Billers. However, in approving the Printer for certification, BPAY does not make any guarantee or make any representation to the Printer, or any BPAY Billers to whom the service is to be provided by the Printer, as to the quality, performance or fitness for purpose of the Printer’s solution.

Note 2: Certification is granted only for the version of the solution used by the Printer for QR Code generation, against the version of the BPAY QR Code Specification noted in this form.

Note 3: Scanning by BPAY of QR Codes provided by the Printer was performed using <NAME OF QR CODE SCANNER>. No guarantee is provided as a part of this Certification that QR Codes produced using the certified process and Printer’s solution will be successfully read by all QR Code readers.

Note 4: Confirmation of compliance to the relevant branding guidelines on Bills issued by BPAY Billers via the Printer remains the responsibility of the relevant BPAY Biller Institution.