GBG The Gambling Business Group

GBG Technical Standard

TITO (Web Services) v.2.4b [APPROVED]

September 2026

Version History

Date	Version	Description of Changes
March 10, 2014	1.0	- Initial Draft
March 12, 2014	1.1	- Added *MachineAssetNo* as a returned value within the Print Ticket web service method.
April 12, 2014	1.2	- Resolved formatting conflicts (duplicate titles and also updated Contents page)
April 17, 2014	1.3	- *Purpose*, modified scope of Technical Standard to exclude Data Encryption. - *Overview*, modified to remove references to DHCP Service and SSL Encryption & operator defined Fixed or dynamic assignment of IP Addresses for Machine Host. - *Overview*, added the *InitialMachineHostRegistration* process. - *Overview,* expanded *PowerUpMachineHostRegistration* process. - *Overview,* removed *Data Encryption* section. - *Changes to General & TITO Ticketing Web Service Methods.*

March 5, 2017	1.3(a)	- Modifications to 1.3 to bring it in line with JCM's CashlessService wsdl file that has been used by all System & Machine Suppliers to date.
		  o Ticket Print Complete (M/c Host Sends): removed Ticket Value
		  o Ticket Print Failed (M/c Host Sends): removed Ticket Value
		  o Ticket Validate (System Host Returns): renamed TicketIssueDateTime to TicketDateTime.
		  o Ticket Print (System Host Response): Expiry Period redefined as 32 bit Integer value
		- Site Code maximum of 10 digits.
		- Machine Asset Number maximum 20 characters.
		- References to Card based Cashless have been removed and will be included within a separate Cashless Card Technical Standard.
		- Ticket Issuance Number printed on Cash Ticket managed by M/c Host.
		- Ticket Max Value Exceeded response code is optional feature that may or may not be supported by the System Host.

May 15, 2017	2.1	- Removed Cashless Card section, which is to be introduced as separate Technical Standard when requested by Machines Sub Group. - Redefined maximum length of Machine Asset Number to 20 characters and Site Code to 10 characters. - New section for GBG Version Verification - New appendix for Handpay Receipt Layout. - Specified that when ticket printed then Ticket Printed message remains on screen either until ticket has been removed or after 2 seconds has passed. - Added response code to Audit Ticket-System Host response. - Defined that Version Verification response is a comma separated data string returned by the System Host.
June 20, 2016	2.1	- Added response code data field to Audit Ticket-System Host response. - Clarified that Version Verification System Host response is a comma separated data string. - Name of GBG TITO web service defined.

Date	Version	Description of Changes
April 11, 2018	2.1a	- Added class names for Ticket Validation and Ticket Print sections that align document with approved wsdl file.
March28, 2018	2.2	- Divided Machine Host registration into Initial and Powerup processes, in line with the similar 2 part process introduced in Data Capture (v.1) and EFT tech Standards (v.1). - Moved description of Machine Host Registration process into separate technical standard - Added/defined reserved blocks of response codes for Cash Ticketing specific functions (100 to 199 & -100 to -199). - Removed Initial System Host Key from all web method calls apart from Registration process to provide greater security. - Added Machine Heartbeat period parameter to the Powerup Registration process - Added Ancillary Data field to the Network Heartbeat process to align it will all other technical standards.
January 2023	2.3	- Provision for Debit Card Tickets and Payment Wallet Tickets that are purchased and redeemed at a Kiosk-Paystation with funds and winnings handled separately to Cash and Promo funds.
January 2024	2.4	- Additional data field for Ticket Validate Response and Ticket Validate Confirm that specifies the amount of the ticket value that can be transferred back to the bank account.
April 2024	2.4a	- Added narrative on page 8 regarding System Host processing a DC and PW Tickets received from a machine host that supports a GBG-TITO version less than v.2.3. - Clarified value of EPSTransferAmount and EPSTransferredAmount is in pence. - Clarified EPS Fund Threshold data field on page 10. - Reference to GBG Machine Host Machine Registration technical standard is changed from v.1.0 to v.1.1a.
April 2025	2.4b	- Narrative revised with regards to rules around allowing multiple tickets from same debit card, debit card tickets being split between two machines and funds on machine that are below EFT Fund Threshold being treated as cash.

Contents

1 Purpose of Document 5
2 Overview 6
2.1 Architecture & Principle Requirements 6
2.2 General Functions 6
2.2.1 Connectivity between Machine Host & TITO System Host 6
2.2.2 Initial Machine Host Registration 6
2.2.3 Power Up Machine Host Registration 6
2.3 Cash TiTO (Ticket In & Ticket Out) 6
2.3.1 Validating a Cash, DC Cash or PW Cash Ticket 7
2.3.2 Printing a Cash, DC Cash or PW Cash Ticket 8
3 General Web Service Methods 9
3.1 Version Control 9
3.2 Machine Host Initial Registration 9
3.3 Machine Host Power Up Registration 9
4 Cash Ticket Web Service Methods 11
4.1 Ticket Printing 11
4.2 Ticket Validation 15
5 System Host Network Heartbeat 18
6 Audit Receipt 19
APPENDIX 1 – TITO RESPONSE CODES 20
APPENDIX 2 – CONFIGURATION CODES 22
APPENDIX 3 – CASH OUT TICKET LAYOUT & DATA FIELDS 23
APPENDIX 4 – HANDPAY RECEIPT LAYOUT & DATA FIELDS 25
APPENDIX 4 – PROCESSING OF TICKETS PURCHASED USING ELECTRONIC PAYMENT SYSTEMS 27

1 Purpose of Document

The purpose of the document is to provide an open TITO standard based on the use of Web Services technology, which can be used by any gaming Machine and System suppliers.

The document is divided into 2 parts:

1. Overview of the approach to the principle functions behind the TITO functions.

2. Details of the open Web Service Methods included within the proposed protocol standard.

In addition, the scope of this document does not include non-Cashable Promotional Tickets, which is covered by the *GBG – Promotional Non-cashable Technical Standards*.

Recommended guidelines for an appropriate network and data encryption methods for System & Machine Hosts that use the GBG Web Service based protocol standards, are covered by the *GBG – Network & Data Encryption Best Practices Guidelines* document that is available on the GBG Technical Standards file repository.

2 Overview

2.1 Architecture & Principle Requirements

Please refer to the GBG Machine Host Registration technical standard v.1.0.

2.2 General Functions

2.2.1 Connectivity between Machine Host & TITO System Host

Please refer to the GBG Machine Host Registration technical standard v.1.1a.

2.2.2 Initial Machine Host Registration

Please refer to the GBG Machine Host Registration technical standard v.1.1a.

2.2.3 Power Up Machine Host Registration

This process is initiated when a Machine Host is Registered with the TITO System Host when it is powering up or after its network connection to the TITO System Host has been restored.

Machine Host calls *MachineHostPowerUpRegistration* and after the TITO System Host has validated the machine host it returns a new *Session System Host Key* and its TITO Config Options.

Please also refer to the GBG Machine Host Registration technical standard v.1.1a.

2.3 Cash TiTO (Ticket In & Ticket Out)

The Machine Host must be capable of supporting the following functions related to TITO:

1. Handling Ticket Events received from the Note Acceptor, which include the Ticket Serial Number (scanned bar code value) that is passed onto TITO System Host using the relevant Web Service method.
2. Managing the transfer of the value of a valid Ticket (returned by the TITO System Host) onto the gaming machines Bank and/or Credit meter, in accordance with the existing UK gaming regulations.
3. Support Cash, DC Cash and PW Cash buckets that separate funds source from cash, debit card and payment wallet transactions.
4. For DC Cash and PW Cash buckets verify and store the EPS (electronic payment system) token issued by the Paystation/Kiosk when the originating ticket is purchased.
5. Creating and sending print commands to the Ticket Printer for Cash Pay-out Tickets after receiving a valid response from the TITO System Host to the Print Ticket web service method.
6. Operatives able to manually configure Operators unique Machine Asset for the gaming machine thru the game screen, which is stored in the game's non-volatile memory.
7. A unique manufacturer's serial number that remains static throughout the life of the gaming machine board.
8. Operative able to manually configure the static IP Address of the TITO System Host Floor Server/Site Controller thru the game screen, which is stored within the game's non-volatile memory.

TITO System Host supports the following functions:

1. Initial and Power up registration processes for checking that the gaming machine is enrolled on the TITO System Host, i.e. is a valid machine asset.
2. Generate a Ticket Transactions with a unique Ticket Serial Number, which is represented as a 2D bar code on the Cash Ticket Printed at the machine.
3. Maintain the status of the ticket transaction.
4. Validate tickets based on the Ticket Serial Number passed by the gaming machine.
5. Ability to record the EPS token for DC Cash & PW Cash tickets.

It is assumed that the gaming machine supports a TCP/IP connection to the TITO System Host Floor Server/Site Controller and can use Web Services methods.

2.3.1 Validating a Cash, DC Cash or PW Cash Ticket

Player inserts bar code ticket into a Note Validator (capable of scanning a 2D bar code Cash Ticket) and gaming machine extracts the Ticket Serial Number, included within the Ticket Event sent by Note Acceptor.

Machine Host uses the first two digits of the bar code number (Ticket Serial Number) to determine the type of ticket (01 – Cash, 02 – Standard Promo Ticket, 03 – Cash Match Promo Ticket, 04 – Debit Card Ticket or 05 – Payment Wallet Ticket) so that it can connect to the relevant TITO System Host. If the Ticket does not have a 01, 02, 03, 04 or 05 leading value, then the Machine Host continues to validate the Ticket with the TITO System Host, and if a 'Ticket Not Found' error response is returned then the Machine Host returns the ticket to the player.

Gaming Machine calls the Validate Ticket web method (described in the next section) on the TITO System Host, which determines if the ticket is a cash, debit card or payment wallet ticket that is valid/active. If so, then the TITO System Host includes the value of the Ticket and if relevant the EPS Token within its response.

When TITO System Host responds with a valid ticket response and an EPS token has been provided then the gaming machine host checks whether the EPS Token for the bucket type stored within its NV RAM matches the token received.

If the EPS code received does not match the EPS token stored against the bucket related to the ticket type in NVRAM then the machine host cancels the ticket validation process and displays an appropriate message onscreen.

If the EPS code does match then gaming machine host adds the value of the Ticket and the EPS Token (for DC Cash & PW Cash ticket) to its NVRAM and then:

1. Sends a Stack Ticket command to the Note Acceptor.
2. Sends confirmation to the TITO System Host that the ticket has been processed.
3. Displays the machines Transfer function, which allows players to transfer game credits onto the Credit meter as per the UK legislation, or transfers the value of the ticket onto the Bank meter.

When a **01 Cash Ticket** is redeemed at a gamimg machine the value of the ticket is added to the main cash bucket together with Notes & Coins.

04 Debit Card tickets are purchased by customers at the Paystation/Kiosk using a debit card and are when redeemed at a gaming machine host are added to a DC Cash bucket and the Token is stored in NV memory.

05 Payment Wallet Tickets are purchased at the Paystation/Kiosk using funds held on a Payment Wallet solution and when redeemed at a gaming machine host are added to a PW Cash bucket and the payment token is stored within NV memory.

If only part of a ticket is redeemed then the ticket type for the balance not transferred must match the ticket type of the ticket that just been redeemed, i.e. if a £40 DC Cash ticket has been redeemed at the machine but only £20 has been transferred then an 04 Debit Card Ticket is requested for the £20 balance.

All winnings are returned to the Cash, DC Cash or PW Cash bucket that funded the game play.

See appendix 5 for more details on how the machine and system hosts are expected to handle 04 Debit Card and 05 Payment Wallet Tickets.

If the TITO System Host confirms that the ticket is invalid then the gaming machine sends a Reject command to the Note Acceptor, and the ticket is returned to the player, and an appropriate error message displayed on screen until the ticket is removed from the printer, or after 2 seconds.

Note: if the system host receives a 04 or 05 ticket from a machine host that supports a GBG-TITO version that is less than v2.3 then the system host returns an -103 Invalid Ticket response so that the ticket is returned to the player.

2.3.2 Printing a Cash, DC Cash or PW Cash Ticket

Player cashes out the gaming machine host prints a ticket for each of the buckets that contain funds (Cash, DC Cash, PW Cash, Promo & Cash Match Promo).

Cash related Ticket Print process is as follows:

1. Displays a Ticket Printing notification message displayed on the game screen.
2. Calls the Ticket Print web service method on the TITO System Host passing the value of the credit and/or Bank meter on the gaming machine.
3. If a 04 DC Cash or 05 PW Cash ticket is being printed then the machine host passes the Token held in NV memory.

Note:
The first two digits of the Ticket Serial Number generated by the TITO System Host are reserved to identify the type of ticket, with 01 for Cash Tickets, 04 for Debit Card Cash tickets & 05 for Payment Wallet Tickets.

Recommended that the order for printing tickets by the machine host when a player cashes out is as follows:

1. ***Cash Match Promo (covered by Promotional tech standard)***
2. ***Standard Promo (covered by Promotional tech standard)***
3. ***Cash***
4. ***DC Cash***
5. ***PW Cash***

TITO System Host creates a Ticket Transaction, generates a unique Ticket Serial Number which is returned to the gaming machine, together with the other parameters to be printed on the Cash Ticket. System Host stores the token against the transaction stored within its records.

Gaming machine then creates and sends a Ticket Print command to the Ticket Printer. If the expiry period is set to 0 then *Ticket Never Expires* is printed on the ticket.

Once the printer has confirmed the Validation Number has been printed then the gaming machine confirms to the TITO System Host that the Ticket has been printed and removes the Ticket Printing notification message on the game screen.

Note: when the DC Cash and/or PW Cash bucket is empty following the printing of a ticket or game play then the relevant token held within NV memory is removed.

3 General Web Service Methods

3.1 Version Control

Please refer to the GBG Machine Host Registration technical standard v.1.1a, in particular section 3.1.

3.2 Machine Host Initial Registration

Please refer to the GBG Machine Host Registration technical standard v.1.1a, in particular section 3.2.

3.3 Machine Host Power Up Registration

Please refer to the GBG Machine Host Registration technical standard v.1.1a, in particular section 3.3

MachineHostPowerUpRegistration

Machine Host Sends

Data Field	Data Type	Max. Length	Description
MachineHostAssetNumber	String	20	Operator specific machine asset number manually configured thru the Machine Host Setup screen
MachineHostSerialNumber	String	100	Fixed unique manufacturer serial number encoded as part of the manufacturing process.
MachineHostMACAddress	String	50	Static MAC address for the relevant network interface card used to connect to the TITO System Host
InitialSystemHostKey	String	50	Alpha & numeric unique ID issued initially issued by the relevant System Host as part of the Machine Host Initial Registration process.

TITO System Host Returns (XML format message)

Data Field	Data Type	Max. Length	Description
ResponseCode	Int	32 bit	See Appendix 1

Data Field	Data Type	Max. Length	Description
SessionSystemHostKey	String	50	Alpha & numeric unique ID issued by TITO System Host. NULL value is returned if machine not setup on the TITO System Host
SystemHostDateTime	Date Time	N/a	Current Date & Time of the System Host's clock, which the Machine Host could use to time sync itself with the System Host. Date & time in UTC format.
MachineHostHeartbeatPeriod	Int	32 bit	Period in seconds between every heartbeat call made by the Machine Host.
FUNCTION SPECIFIC DATA FIELDS			
ConfigOptions	String	50	See Appendix 2, comma separated data packet
SiteName	String	100	Header reference printed at top of cash ticket
SiteCode	String	10	Reference printed on cash ticket
SiteAddress	String	100	Sub header reference printed on cash ticket
SiteTown	String	100	Sub header printed on cash ticket
EPSFundThreshold	Int	32 bit	When DC Cash or PW Cash funds (in pence) held by a machine host fall below the threshold then these funds are moved to the cash bucket and the relevant EPS token is removed from NVRAM, see bottom of page 27 for more details.

Machine Host Action

If System Host returns a **[0]** response code then the Machine Host sets its status to **Registered**, stores new *Session System Host Key* and function specific parameters in VRAM and then initiates the Network Heartbeat for the relevant System Host.

If System Host returns a **[-1]** or **[-2]** response code then the Machine Host clears the Initial System Host Key within NVRAM, sets its status to **Not Registered**, disables the function related to the System Host and then calls the *Machine Host Initial Registration* process every 30 seconds until it receives a [0] response code.

4 Cash Ticket Web Service Methods

4.1 Ticket Printing

Pre-requisites

- **Machine Host has been setup on the TITO System Host with initial and powerup registration processes completed and Initial & Session *System Host Keys* issued by the TITO System Host.**
- **Ticket printer installed and machine configured to print tickets for all pay outs.**
- **If Machine Host not registered/connected to TITO System Host then all pay outs are Handpays.**
- **If the ticket has been purchased using a debit card at a kiosk/paystation or the gaming machine host is in a Debit Card Play Session with the Note Validator and Coin Mech disabled, then a 04 ticket type is requested.**

To print a cash ticket at a machine the player initiates a pay out at the machine and Machine Host calls the *TicketPrint* web service method, as described below.

If the *TicketPrint* request is made when the player is cashing out at the machine and **NOT** as part of the Funds Transfer process, and the value of Debit Car Cash funds held by the funds is less than the EFT Fund Threshold setting (passed to machine during powerup registration) then the Debit Card Cash funds are treated as a Cash Session Ticket.

TicketPrint

Machine Host Send (Class Name: TicketPrint)

Data Field	Data Type	Max. Length	Description
SessionSystemHostKey	String	50	Unique ID issued by TITO System Host when machine registers with M/c Host after power up/network reconnection.
TicketValue	Int	32 bit	Value in pence of the ticket to be printed.
TicketType	Int	32 bit	01 – Cash Session Ticket 04 – Debit Card Cash Ticket 05 – Payment Wallet Cash Ticket
EPSToken	String	50	Unique token issued by the electronic payment system installed in the Paystation that is linked to the debit card used or payment wallet used to purchase the original DC Cash or PW Cash Ticket. 0 value returned if the ticket being printed is a 01 Cash Ticket. Note: the EPS Token would be held in Machine Host's NVRAM if a Debit Card Cash Ticket had been previously redeemed during the current play session.

System Host Action

If a valid print request, then the System Host creates a partially processed ticket transaction within its records and stores the EPS Token received from the Machine Host and then returns details to be printed on the ticket including the ticket header/title that distinguishes the cash ticket type.

TITO System Host Return (Class Name: TicketIssueDetails)

Data Field	Data Type	Max. Length	Description
ResponseCode	Int	32 bit	See Appendix 1

Data Field	Data Type	Max. Length	Description
TicketSerialNumber	String	18	Ticket Serial Number generated by the TITO System Host that is printed on the cash ticket.
TicketDateTime	DateTime	50	Format: dd/mm/yyyy hh:mm:ss. Transaction date and time to be printed on the cash ticket.
MachineAssetNo	String	20	Machine asset number to be printed on the cash ticket if a gaming position is not returned by the TITO System Host
ExpiryPeriod	Int	32 bit	Period in days that ticket is valid which is included within the 'Ticket valid for x days' statement printed on the cash ticket. If TITO System Host returns 0 then *Ticket Never Expire*s is printed on the ticket.
ExpiryDate	String	50	Format: dd/mm/yyyy. Expiry date to be printed on the cash ticket. If TITO System Host returns 0 then no expiry date is printed on ticket.
ExpiryTime	String	50	Format: hh:mm:ss. Expiry time to be printed on the cash ticket. If TITO System Host returns 0 then no expiry time is printed on the ticket.
TicketValue	Int	32 bit	Value of ticket to be printed which was originally passed by the Machine Host
TicketHeader	String	50	Text to be printed as the header on the Ticket, i.e. Cash Ticket, DC Cash Ticket or PW Cash Ticket.

Note: the first 2 digits of the Ticket Serial Number, generated by the TITO System Host, are reserved and used to define the type of ticket, which the Machine Host uses to initially connect to the relevant GBG Server.

A **01 Cash Ticket** type is used if cash (notes & coins) funds are used to purchase a ticket or the gaming machine host is cashing out from the Cash bucket.

A **04 DC Cash Ticket** type is used if the ticket (or originating ticket) has been purchased at a paystation using a debit card or the gaming machine host is cashing out funds from the DC Cash Bucket.

A **05 PW Cash Ticket** type is used if the ticket has been purchased at a paystation using a payment wallet app or the gaming machine host is cashing out funds from the PW Cash bucket.

Machine Host Action

If the response code is 0 then Machine Host creates the relevant Ticket Print Command, using the parameters returned by the TITO System Host, and sends it to the Ticket Printer. Machine Host displays 'Ticket Printing' player message on game screen.

When the Printer has confirmed that the Bar Code on the Ticket has been printed and the credit printed is removed from the machine, the Machine Host calls the *TicketPrintCompleted* method within the TITO System Host, see below. Machine Host then displays 'Please Take Ticket' player message until Machine Host detects that the printed ticket has been removed from printer, or after 2 seconds.

TicketPrintComplete

Machine Host Sends (Class Name: TicketPrintComplete)

Data Field	Data Type	Max. Length	Description
SessionSystemHostKey	String	50	Unique ID issued by TITO System Host when machine registers with M/c Host after power up/network reconnection.
TicketSerialNumber	String	18	18 digit ticket serial number passed by the TITO System Host.

System Host Action

System Host sets the ticket transaction to Open/Active.

TITO System Host Return (no class name just simple response)

Data Field	Data Type	Max. Length	Description
ResponseCode	Int	32 bit	See Appendix 1

If valid response received from TITO System Host then Credit has been removed from the machine hosts game credit meter.

If the Machine Host is unable to print a ticket then it calls the *TicketPrintFailed* web method.

TicketPrintFailed

Machine Host Send (Class Name: TicketPrintFailed)

Data Field	Data Type	Max. Length	Description
SessionSystemHostKey	String	50	Unique ID issued by TITO System Host when machine registers with M/c Host after power up/network reconnection.
TicketSerialNumber	String	18	18 digit ticket serial number passed by the TITO System Host.

TITO System Host Return (no class name just simple response)

Data Field	Data Type	Max. Length	Description
ResponseCode	Int	32 bit	See Appendix 1

Note:

If the Machine Host does not receive a response from the TITO System Host within the timeout period (returned by TITO System Host on Machine Host Powerup Registration) then the Machine Host will retry up to 5 times.

If after the fifth retry, the Machine Host still does not receive a response from the TITO System Host then the Machine Host will go into Handpay mode and display a TITO System Host Communication Error message on screen (if no response from TicketPrint web method), or continue with normal game operation (if no response to TicketPrintComplete or TicketPrintFailed).

If there is a connection failure part way thru through the Print Ticket process then it is assumed that appropriate manual controls are available on the TITO System Host that allow a System Administrator to manually change the status of the relevant ticket transaction.

4.2 Ticket Validation

Pre-requisites

- **Machine Host has been setup on the TITO System Host with initial and powerup registration processes completed and Initial & Session S*ystem Host Keys* issued by the TITO System Host.**
- **Ticket printer installed and machine configured to print tickets for all pay outs.**
- **If Machine Host not registered/connected to TITO System Host then all pay outs are Handpays.**
- **For 04-Debit Card Cash and 05-Payment Wallet Cash tickets the gaming machine host supports DC Cash and PW Cash buckets and manages EPS tokens received from the System Host.**

To validate a Ticket at a machine the following process takes place:

1. Player inserts a ticket into the Machine's Note Acceptor.
2. Ticket serial number received by Machine Host, if first two digits are 01 then Cash Ticket, 04 – DC Cash Ticket and 05 – PW Cash Ticket.
3. Machine Host calls the *ValidateTicket* web service method within the TITO System Host.

TicketValidate

Machine Host Send (Class Name: TicketValidate)

Data Field	Data Type	Max. Length	Description
SessionSystemHostKey	String	50	Unique ID issued by TITO System Host when machine registers with M/c Host after power up/network reconnection.
TicketSerialNumber	String	18	18 digit ticket serial number passed by the TITO System Host.

TITO System Host Returns (Class Name: TicketValidateDetails)

Data Field	Data Type	Max. Length	Description
ResponseCode	Int	32 bit	See Appendix 1.
TicketValue	Int	32 bit	value of the ticket to be printed in pence
TicketDateTime	DateTime	N/a	Date and time that the ticket was issued. Format: dd/mm/yyyy dd:mm:ss.
EPSToken	String	50	Unique token issued by the electronic payment system installed in the Paystation that is linked to the debit card used or payment wallet used to purchase the original DC Cash or PW Cash Ticket. 0 value returned if the ticket being printed is a 01 Cash Ticket.
EPSTransferAmount	Int	32 bit	The amount of the Ticket Value (in pence) that can be transferred back to the bank account linked to the EPS Token by paystations. Machine Host would ignore if it does not support transfer of funds to bank account.

Machine Host Action

If the response code is [0] then the Ticket is Valid.

If an EPS Token is returned that is not 0 then the gaming machine host checks whether an EPS token for the bucket related to the ticket type is stored within NVRAM and if so if the EPS token held matches the one received from the System Host.

If the EPS token does not match, i.e. ticket purchased using different debit card, then the gaming machine host cancels the ticket validation process.

If the EPS Token does match or there is no EPS Token held in NVRAM for the ticket type then the Machine Host stores the EPS Token in NVRAM and then stacks the Ticket, accepts and holds the value of the ticket returned by the TITO System Host.

If the value of the Ticket is below the maximum transfer value for the Machine Category, then Machine Host adds the value of ticket on to the Game Credit meter and no player information screen is displayed.

If the ticket value exceeds the maximum transfer value for the machine category then the Machine Host automatically transfers the maximum transfer value onto the Game Credit meter and displays a Credit Transfer screen, which allows players to either transfer the whole or part of the residual value onto the Game Credit meter or print a Cash Ticket for the value yet to be transferred.

If the response code is [-101], [-102], [-103], [-104] or [-105] the Machine Host rejects the ticket, which is returned to the player, and the relevant player message defined for the response code in Appendix 1 is displayed on the game screen. Error message displayed until player has removed rejected ticket from the Note Acceptor.

Note: in order to support tickets generated by a previous version of the GBG TITO, if the leading 2 digits of the Ticket Serial Number are 02 (Standard Promo Ticket) or 03 (Cash Match Promo Ticket) and the Machine Host is registered with a Promo System Host, then the Machine Host attempts to validate the ticket with the Promo System Host.

If the ticket is valid then once the ticket has been stacked by the Note Acceptor and the value of the ticket has been accepted Machine Host, then the Host Machine calls the *TicketValidateComplete web service* method, see below.

Note: if the ticket type is 04 or 05 then the gaming machine host transfers the value of the ticket into the DC Cash or PW Cash bucket. The gaming machine host then prioritises the use of funds for game play based on funds held within the Cash bucket, then the DC Cash bucket and finally the PW Cash bucket. Any game play winnings are returned to the bucket that funded the game play.

TicketValidateComplete

Machine Host Send (Class Name: TicketValidateComplete)

Data Field	Data Type	Max. Length	Description
SessionSystemHostKey	String	50	Unique ID issued by TITO System Host when machine registers with M/c Host after power up/network reconnection.
TicketSerialNumber	String	18	18 digit ticket serial number originally scanned by the BV.
TicketValue	Int	32 bit	Value of ticket in pence

EPSTransferredAmount	Int	32 bit	Amount of the ticket value (in pence) transferred to bank account by paystation. Machine Hosts that do not support transfer of funds to bank account would return 0.

TITO System Host Returns

Data Field	Data Type	Max. Length	Description
ResponseCode	Int	32 bit	See Appendix 1

If a valid ticket is not stacked by the Note Acceptor and/or the ticket value is not accepted by the Machine Host then then Machine Host calls *TicketValidateFailed.*

TicketValidateFailed

Machine Host Send (Class Name: TicketValidateFailed)

Data Field	Data Type	Max. Length	Description
SessionSystemHostKey	String	50	Unique ID issued by TITO System Host when machine registers with M/c Host after power up/network reconnection.
TicketSerialNumber	String	18	18 digit ticket serial number originally scanned by the BV.
TicketValue	Int	32 bit	Value of ticket in pence

TITO System Host Return (no class name just simple response)

Data Field	Data Type	Max. Length	Description
ResponseCode	Int	32 bit	See Appendix 1

Note:

If the Machine Host does not receive a response from the TITO System Host within the timeout period (returned by TITO System Host during Power Up Machine Host Registration) then the Machine Host will retry up to 5 times.

If after the fifth retry, the Machine Host still does not receive a response from the TITO System Host then the Machine Host will return Ticket to Player (if no response from TicketValidate web method) or continue with normal game operation (if no response to *TicketValidateComplete* or *TicketValidateFailed*).

If there is a network connection failure part way thru through the Print Ticket process then it is assumed that appropriate manual controls are available on the TITO System Host that allow a System Administrator to manually change the status of the relevant ticket transaction.

5 System Host Network Heartbeat

Pre-requisites

- **Machine Host has been setup on the TITO System Host with initial and powerup registration processes completed and Initial & Session S*ystem Host Keys* issued by the TITO System Host.**

This function allows for a heartbeat process initiated by the Machine Host that allows the TITO System Host to monitor the network communications status for machines that support the GBG-TITO (Web Services) technical standard.

Following Power Up registration with the TITO System Host, the Machine Host calls the *MachineHostHeartbeat* web service method and passes its Session System Host Key, which is used by the TITO Session System Host Key to verify the status of the Machine Host.

A [0] response code is returned if the Machine Host is valid and the current data and time set on the TITO System Host, which allows for the Machine Host to check and sync its time clock with the TITO System Host. When it receives the [0] response code the Machine Host ensures that its status is **Registered** and that the TITO is enabled and then calls the Network Heartbeat web method based on Config Option 2, returned as part of the Machine Host Powerup Registration process.

If the Machine Host is invalid then the TITO System Host returns a [-1] or [-2] response code and when this is received by the Machine Host then it changes its status to **Not Registered**, clears the Initial System Host Key within its NVRAM and disables its TITO Operation.

If there is no response (network failure) then the Machine Host changes its status to **Offline**, disables the TITO function and then calls the *MachineHostPowerupRegistration* web method every 30 seconds.

MachineHostHeartBeat

Machine Host Sends

Data Field	Data Type	Max. Length	Description
SessionSystemHostKey	String	50	Unique ID issued by TITO System Host when machine registers with M/c Host after power up/network reconnection.

TITO System Host Returns

Data Field	Data Type	Max. Length	Description
ResponseCode	Int	32 bit	See Appendix 1
AncillaryData	String	50	Ancillary data that is related the response code returned by the System Host. NULL value returned if no ancillary data.

6 Audit Receipt

Pre-requisites

- **Machine Host has been setup on the TITO System Host with initial and powerup registration processes completed and Initial & Session S*ystem Host Keys* issued by the TITO System Host.**

Option available within Service Menu on Machine Host called Perform Audit, which when selected by the site operative, the Machine Host then calls new ***PerformAudit*** web service on the TITO System Host and passes thru its Power Up System Host Key.

PerformAudit

Machine Host Sends

	Data Type	Max Length	Description
SessionSystemHostKey	String	50	Unique ID issued by TITO System Host when machine registers with M/c Host after power up/network reconnection.

TITO System Host Returns

	Data Type	Max Length	Description
ResponseCode	Int	32 bit	See Appendix 1
AuditID	String	50	Unique ID generated by the TITO System Host for the specific Audit/Collection.
AuditDateTime	DateTime	50	Format: dd/mm/yyyy hh:mm:ss. Date and time that the audit was created on the TITO System Host
MachineAssetNo	String	20	Unique operator asset reference configured on TITO System Host for specific machine asset.
TotalValueTicketsPrinted	Int	32bit	Total value of tickets printed by the specific machine asset during the audit/collection period.
TotalValueTicketsRedeemed	Int	32bit	Total value of tickets redeemed by the specific machine asset during the audit/collection period.
TotalQuantityTicketsPrinted	Int	32bit	Total quantity of tickets printed by the specific machine asset during the audit/collection period
AuditTicketPrinterType	String	50	Defines the Ticket Printer Type related to the Print Command String returned by TITO System Host. 01 – JCM GEN2U/GEN5 RS232 02 – JCM GEN2U/GEN5 USB 03 – ITL SSP 04 – ITL ccTalk
AuditTicketPrintCommand	String	200	The ticket print command string created by the TITO System Host.
TotalQuantityTicketsRedeemed	Int	32bit	Total quantity of tickets redeemed by the specific machine asset during the audit/collection period.

Machine Host either passes the data contained within the TITO System Host response to the Printer or generates the relevant Print Command, which is then passed to the printer. Once the information has been passed to the printer then the Audit Receipt is printed.

APPENDIX 1 – TITO RESPONSE CODES

Outlined below are a list of the Response Codes that relate to registration of the gaming machine on the TITO System Host as well as the Printing and Validating of Cash Tickets by the gaming machine. Response codes 100 to 199 & -100 to -199 reserved for Cash TITO specific functions.

Response Code	Response Text	Machine Host Player Message	Action to Response
0	Valid Machine Host/Request	N/a	Host Machine is setup on System Host.
-1	Invalid Machine Host (Unknown Machine Host)	N/A	Machine Host not setup on GBG System Host. Machine Host displays **Not Registered** as its status for the relevant GBG function, clears any Initial System Host Key held within NVRAM and calls *Initial Machine Host Registration* web method every 10 seconds.
-2	Invalid Machine Host (Duplicate Entity)	N/a	Where there is already another Machine Host setup on System Host with the same Asset Number but different other parameters and/or System Host Key. Machine Host displays **Not Registered** as its status for the relevant GBG function, clears any Initial System Host Key held within NVRAM and calls *Initial Machine Host Registration* web method every 10 seconds.
-3	Valid Machine Host (Awaiting Authorisation)	N/a	Machine Host setup on System Host, however initial registration has not been manually authorised by an authorised person on the relevant GBG System Host. Machine Host displays **Authentication Required** as its status for the relevant GBG function, clears any Initial System Host Key held within NVRAM and calls *Initial Machine Host Registration* web method every 10 seconds.

Response Code	Response Text	Machine Host Player Message	Action to Response
-101	Cash Ticket Validation - Already Redeemed	Ticket Already Redeemed	Cash Ticket with same bar code value has already been redeemed on the System Host. Machine Host sends Reject Ticket command to Note Acceptor so that ticket is returned to player, and *Ticket Already Redeemed* message displayed on game screen.
-102	Cash Ticket Validation – Ticket Expired	Ticket Expired	Cash Ticket expiry period has been exceeded. Machine Host sends Reject Ticket command to Note Acceptor so that ticket is returned to player, and *Ticket Expired* message displayed on game screen.
-103	Cash Ticket Validation – Ticket Not Found	Invalid Ticket	Cash Ticket transaction does not exist within System Host. Machine Host sends *Reject Ticket* command to Note Acceptor so that ticket is returned to player, and *Ticket Expired* message displayed on game screen.
-104	Cash Ticket Validation – Cancelled Ticket	Cancelled Ticket	Machine Host has cancelled the printing of a cash ticket part way thru the process, and sent cancelled payment.
-105	Cash Ticket Validation – Machine Threshold Exceeded	Ticket Maximum Value Exceeded	Where the system has determined that the value of the cash ticket exceeds that maximum amount that can be redeemed at a gaming machine.
-1000	General Error	Error - General	If this is seen, cancel current operation, system has failed operation.

APPENDIX 2 – CONFIGURATION CODES

Table below provides a list of the Configuration Options that are returned to the Machine Host as part of the Machine Host Powerup Registration process. The string returned is comma delaminated data block which contains the sequential order of the Configuration Options listed in the table.

Config Ref	Config Name	Value returned to Machine Host
1	Machine Host-System Host Response Time Out Period.	Period of time (in seconds) that the Machine Host waits for a response from the TITO System Host before associated process times out.
2	Machine Host-System Host Heartbeat Period	Period (in seconds) in between the Heartbeat web method called by the Machine Host.

For example, Config Options [5, 2] returned by the TITO System Host would configure the Machine Host to time out after 5 seconds and to send a heartbeat message every 2 seconds.

APPENDIX 3 – CASH OUT TICKET LAYOUT & DATA FIELDS

The purpose of this section is to provide details of the layout and content of a typical Cash Payout Ticket printed at the machine, together with a description for each specific data type.



Ref	Description	Format	Comments
1	Establishment Name	Max 30 characters	Site Name maintained on TITO System Host and returned to Machine Host for every print request.
2	Address 1	Max 20 characters	Street Name/first line of address for site maintained on TITO System Host and returned to Machine Host for every print request.
3	Address 2	Max 20 characters	Town name for site maintained on TITO System Host and returned to Machine Host for every print request.
4	Ticket Title	Static Data	Recommend 'Cashout Ticket'
5	1D Barcode	18 digits	Managed by printer and represents the Ticket Serial Number generated by the TITO System Host and returned to the Machine Host.
6	Date	DD/MM/YY	Date generated by TITO System Host and returned to Machine Host for the specific print request.
7	Time	HH:MM:SS	Time generated by TITO System Host and returned to Machine Host for the specific print request.

Ref	Description	Format	Comments
8	Value in words	Max 80 characters	Translation from value into words, managed by the Machine Host, which is based on the value returned by the TITO System Host to the Machine Host.
9	Ticket Value	£###,###.##	Value generated by TITO System Host and returned to Machine Host for the specific print request.
10	Leading Edge Ticket Validation Number	18 digits, numeric	Ticket Serial Number generated by TITO System Host and returned to Machine Host with each print request.
11	Ticket Validation Number under bar code	18 digit, numeric	Ticket Serial Number generated by TITO System Host and returned to Machine Host with each print request.
12	Ticket Issuance Number	####	0-9999, incremental counter maintained by printer which automatically resets to 0 after 9999 has been reached.
13	Site Code	Max 10 digits,	Unique reference managed by TITO System Host and returned to Machine Host with every print request.
14	Asset #	Max 20 characters, alphanumeric	Unique reference for the gaming position that the machine asset is installed in on the TITO System Host, which is returned to Machine Host with every print request.
15	Ticket Expiration Period	3 digits, numeric	TITO System Host maintains the expiry period in and returns the Ticket Expiration Period to the Machine Host which passes it onto the printer. Printer then manages the Ticket Expiration text and '*Ticket expires after x days'*, is printed. If TITO System Host returns a 0 value as the Expiry Period then Ticket Never Expires is printed.

This layout is mandatory from an Operators perspective as it provides a standard layout for all tickets printed onsite.

APPENDIX 4 – HANDPAY RECEIPT LAYOUT & DATA FIELDS

The purpose of this section is to define a layout for Handpay Receipts that are printed by the Machine Hosts as well as specify the content printed in the relevant fields within the layout design.

Handpays are generated on the machine when the connection between the Machine & TITO System Host has failed or the amount being cashed out exceeds a Threshold set within the Machine Host.

The Handpay Receipt is printed by the Machine Host, when a Handpay is manually 'keyed off' at the machine/terminal.

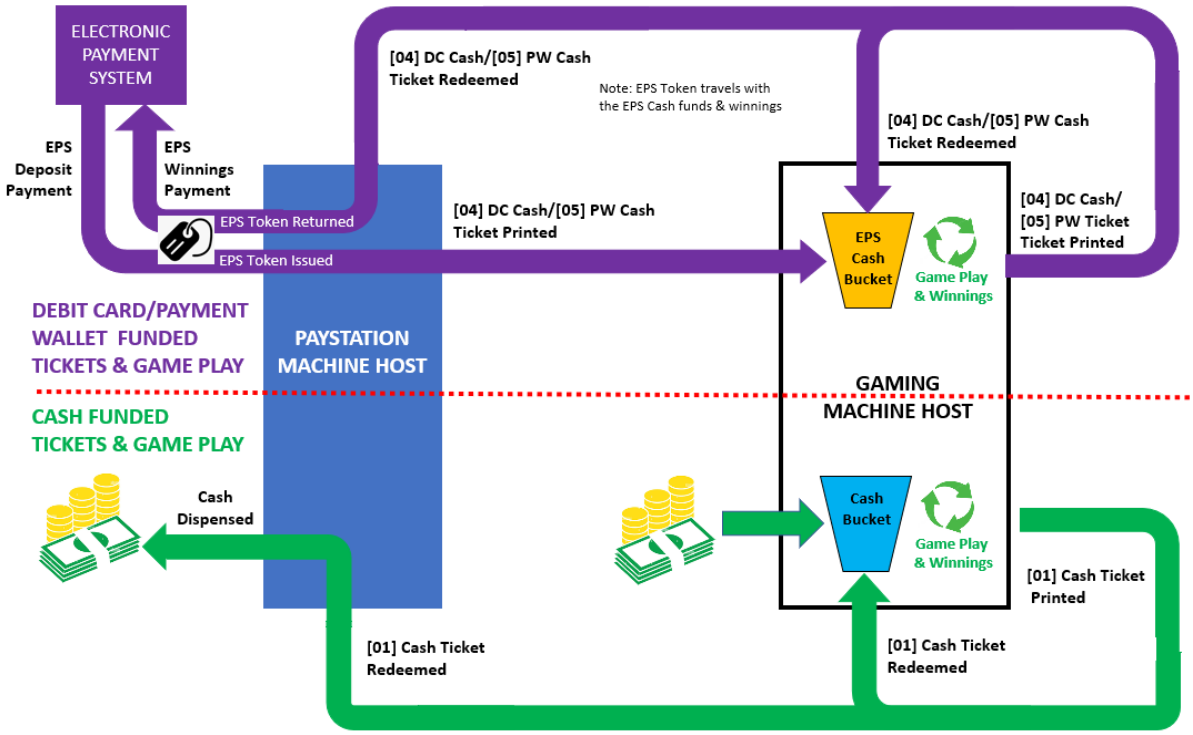
The TITO System Host is not involved with the generation or clearance of the Handpay. The protocol used by the Machine Host to send Handpay Receipt Ticket print commands to the Printer is supplier specific and is not within the scope of the GBG Technical Standards.



Ref	Description	Format	Comments
A	Property Name	Max 30 characters	Name of the property configured on the Machine Host, originally returned by the TITO System Host as part of the Machine Host Powerup Registration process.
B	Address1	Max 20 characters	Address configured on the Machine Host, originally returned by the TITO System Host as part of the Machine Host Powerup Registration process.
C	Town	Max 20 characters	Name of the property configured on the Machine Host, originally returned by the TITO System Host as part of the Machine Host Powerup Registration process.

Ref	Description	Format	Comments
D	Title	Static Data	Title fixed at **HANDPAY RECEIPT**.
E	Handpay Value	£###,###.00	Value of the Handpay keyed off the Machine Host.
F	Handpay Value (in words)	2 lines of text word wrapped.	Same as E except value expressed in words
G	Date	DD:MM:YYYY	Date the Handpay was 'keyed off' the Machine Host, which matches the relevant transaction within data logs maintained by the Machine Host.
H	Time	HH:MM:SS	Time the Handpay was 'keyed off' the machine, which matches the relevant transaction within data logs maintained by the Machine Host.
I	Receipt Number	Max 20 characters	Sequential number maintained by the Machine Host.
J	Free Text Field 1	Max 20 characters	Optional field for the Machine Host to print additional information.
K	Receipt Serial Number (Value)	18 digit numeric	Optional field the Machine Number to printed additional information, i.e. unique transaction number generated by the Machine Host.
L	Site Code/Asset Number	Max 50 characters	Free text field that displays the Site Code configured on the Machine Host, originally returned by the TITO System Host as part of the Machine Host Powerup Registration process.
M	Free Text Field 2	Max 30 characters	Optional field for Machine Host to print additional information related to the Handpay transaction.

APPENDIX 4 – PROCESSING OF TICKETS PURCHASED USING ELECTRONIC PAYMENT SYSTEMS



Overview

- Electronic payment systems (EPS) include debit card contactless reader/chip n' pin devices and payment wallets such as GPT & OKTO.
- Following additional Ticket Types to be added to the GBG-TITO protocol
    - *[04] – DC Cash Ticket* where a debit card is used to purchase a cash ticket. *DC Cash Ticket* (instead of Cash Ticket) displayed on tickets printed by the machine hosts.
    - *[05] – Payment Wallet Cash Ticket* where a payment wallet is used to purchase a cash ticket. *[PW Code] Cash Ticket* (instead of cash ticket) displayed on tickets printed by the machine hosts, i.e. GPT Cash Ticket or OKTO Cash Ticket.
- Unique EPS Token linked to the Debit Card or Payment Wallet used to purchase ticket(s) is issued to the PayStation Machine Host by the Electronic Payment System.
- EPS Token is transferred with the funds (including winnings) between the System Host and Gaming Machine Hosts.
- When a *04 DC Cash Ticket* or *05 Payment Wallet Cash Ticket* is printed the machine host passes the EPS Token to the System Host which records it against the ticket transaction within its records.
- When a 04/05 ticket is redeemed the gaming machine host stores the EPS Token received from the System Host within NVRAM and adds ticket value to the *EPS Cash* bucket, which is separate to the Cash Bucket used for Notes, Coins & Quasi Cash Tickets.
- Gaming Machine Host prioritizes use of EPS Cash funds over Cash funds for game play.

- All winnings from game play funded from the EPS Cash bucket are added to the EPS Cash bucket and likewise all winnings from cash funds are returned to the Cash bucket.
- Winnings from game play part funded by cash and dc/pw cash are added to the cash bucket.

Question: how are Debit Card funds treated with regards to Cash Match Promo?

- *£20 Cash Match Promo Ticket validated at machine.*
- *£30 Debit Card Ticket inserted.*
- *£20 added to Cash-Cash Match Promo bucket and £10 to the Debit Card Cash bucket.*
- *Machine Host expected to track which type of cash is used for play and any winnings associated with this cash type or the associated promo play are returned to the relevant bucket.*

KEY REQUIREMENTS

1. **ELECTRONIC PAYMENT SYSTEM ISSUES/RECEIVES AN EPS TOKEN**
2. **GAMING MACHINE HOSTS SUPPORT EPS CASH BUCKET**
3. **GAMING MACHINE SEPARATES EPS CASH & CASH FOR CASH MATCH PROMOTIONS**

Operational Details

- When a 04/05 Ticket is purchased the Paystation machine host obtains an EPS token (unique reference) from the electronic payment system that is linked to the bank card details/payment wallet held within the electronic payment system, i.e. multiple tickets purchased using the same debit card/payment wallet from the same electronic payment system have the same EPS Token.

  Note: EPS Token issued by Payment Wallet provides will be prefixed with the System Host Code for the Payment Wallet Provider and then the unique token/customer ID, i.e. 6-12131415161. This will enable the paystation to identify and connect with the relevant payment wallet provider

- EPS Token is passed to the System Host when 04/05 tickets are printed (recorded against ticket transaction) and the gaming machine host (stored in NVRAM) when tickets are redeemed.
- When a 04/05 ticket is inserted into a gaming machine host the system host returns the EPS token within the initiate validation request.
- If there is no EPS Token within the gaming machine host's NVRAM or it matches the one received from the system host then the ticket validation is completed, funds added to the EPS Cash Bucket and EPS Token stored within NVRAM.
- If the EPS Token held in NVRAM does not match the EPS Token received from the system host, then the gaming machine host cancels the ticket validation process, displays an appropriate message onscreen and returns the ticket to the player.
- When the gaming machine host starts the ticket print process for funds held within the EPS Cash bucket it includes within the Print Ticket Request the EPS Token held within NVRAM. System Host adds the EPS Token to the ticket transaction.
- If there are funds held within the Cash and EPS Cash buckets when the player cashes out at the machine then two separate tickets are printed DC Cash/PW Cash Ticket and then a Cash Ticket.
- If the EPS Cash bucket falls below the minimum EPS Fund threshold maintained by the System Host (Powerup Registration) then these funds are transferred to the cash bucket and the machine host removes the EPS Token from NVRAM…..could occur after game play or a ticket is printed.

- When a *04 Debit Card Cash Ticke*t is redeemed at a Paystation machine host:
    - System host passes the EPS token recorded against the ticket being redeemed to the paystation machine host (same as for gaming machine hosts).
    - Paystation machine host prompts user to insert/tap Debit Card.
    - Paystation receives the EPS token for the debit card tap/inserted from the card payment device and if this matches the one received from the System Host then Paystation completes the ticket redemption process and initiates the winnings payment process with the card payment device.
    - If the EPS tokens do not match then the Paystation machine host cancels the ticket redemption process, displays an appropriate message and returns the ticket to the player.
- If more than one Paystation on site with debit card purchase facility then the storage of the DC Tokens by the Debit Card Payment system would need to be centralised.
- When a *05 Payment Wallet Cash Ticket* is redeemed at a Paystation machine host:
    - System host passes the EPS token recorded against the ticket being redeemed to the paystation machine host (same as for gaming machine hosts).
    - Paystation machine host connects with the Payment Wallet provider and passes the EPS token to initiate the process for making a payment onto the relevant user wallet.
    - Once the payment process is completed then the ticket redemption process is completed and ticket stacked.