

EMV Migration Guide

Forecourt

For C-Store Retailers



EMV



Compliance

May 2020

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Introduction

EMV Migration Guide

This e-book is provided to you as a part of Gilbarco's EMV knowledge center. We developed this to support U.S. C-Store retailers in the transition to EMV compliance. It provides a wealth of resources about EMV deadlines, requirements, chip cards, plus Gilbarco's forecourt and merchandising technology offerings.

Start Now

We believe that with the number of sites requiring upgrades and the limited number of installation technicians, the longer you wait, the longer you're going to wait! Manufacturing, component, technician, and many other capacity constraints could impact your ability to meet migration deadlines! Gilbarco recommends you start now and get in line first.

Checklist

To get started, simply use the checklist we included in this e-book. This checklist outlines the components that are required to support EMV for each of several pump dispenser types. We even detail different scenarios.

Questions

Who are the experts in case I have questions? For questions, please reach out to our experts at AskAboutEMV@gilbarco.com.

EMV Migration Checklist

To streamline the upgrade process, we compiled a checklist for select dispenser models already deployed into the field.

Encore® 700 S Dispensers

- ☐ EMV hybrid (chip and magnetic stripe) card reader
- ☐ High-speed site connectivity (see below)
- ☐ EMV software upgrade

Advantage, Encore® 300, 500, and S Dispensers

- ☐ Purchase
 - ☐ New Encore® 700 S, or
 - ☐ FlexPay™ IV CRIND® retrofit
- ☐ EMV hybrid (chip and magnetic stripe) card reader
- ☐ High-Speed site connectivity (see below)
- ☐ Future EMV software upgrade (in conjunction with POS)
- ☐ Reimage Kit Options (applies to retrofit kit only)

Wayne Ovation & Vista, and Tokheim Premier B & C Dispensers

- ☐ Purchase
 - ☐ New Encore® 700 S, or
- ☐ EMV hybrid (chip and magnetic stripe) card reader
- ☐ High-Speed site connectivity (see below)
- ☐ Future EMV software upgrade (in conjunction with POS)

High-speed Site Connectivity

CAT-5e/6 cable from the store to the forecourt

– or –

Leverage existing 2-wire with FlexPay™ Connect IP converting hardware

EMV Overview

Overview

Europay International, MasterCard International, and Visa International originally formed EMV as a joint effort in 1994 (later renamed EMVCo, LLC in 1998) to manage EMV card specifications for payment systems around the world. EMV's card holder authentication technology provides a fundamentally more secure payment ecosystem, reducing both the incidence and liability associated with fraudulent payment transactions.

What is EMV?

EMV payments leverage a computer chip located on the front of the payment card to transmit data from the card to the card reader. This chip calculates a unique data packet for each transaction reducing the value of any data that is stolen out of a payment system.

What are the benefits of EMV?

1. Improved security (+ fraud reduction)
2. Reduced cost of chargebacks by avoiding the liability shift
3. Customer card security
4. Brand protection

What does EMV approval mean to the retailer?

EMV approval is granted on three levels:

1. Hardware compliance (devices) – Hardware manufacturers must have certifications on their payment hardware confirming their capability to accept and process EMV transactions.
2. Software compliance (inside the device) – Device manufacturers must also have software on their devices that is certified to accept and process EMV transactions.
3. Certification with the fuel brand or network – Devices in a payment ecosystem must be certified together either via a major oil or payment processing network prior to being able to accept EMV transactions in the field.

When should convenience store retailers plan to deploy EMV technologies?

Most large convenience store retailers have already begun the EMV migration planning and deployment. With the POS liability shift, they understand the need to begin their hardware deployment early for a variety of reasons:

1. Costs: Spread the cost over multiple years
2. Manufacturing Capacity: Avoid manufacturing capacity constraints and potentially extended lead times
3. Installation Bottleneck: Avoid installing technician bottleneck as the liability shift dates approach.

EMV Timeline



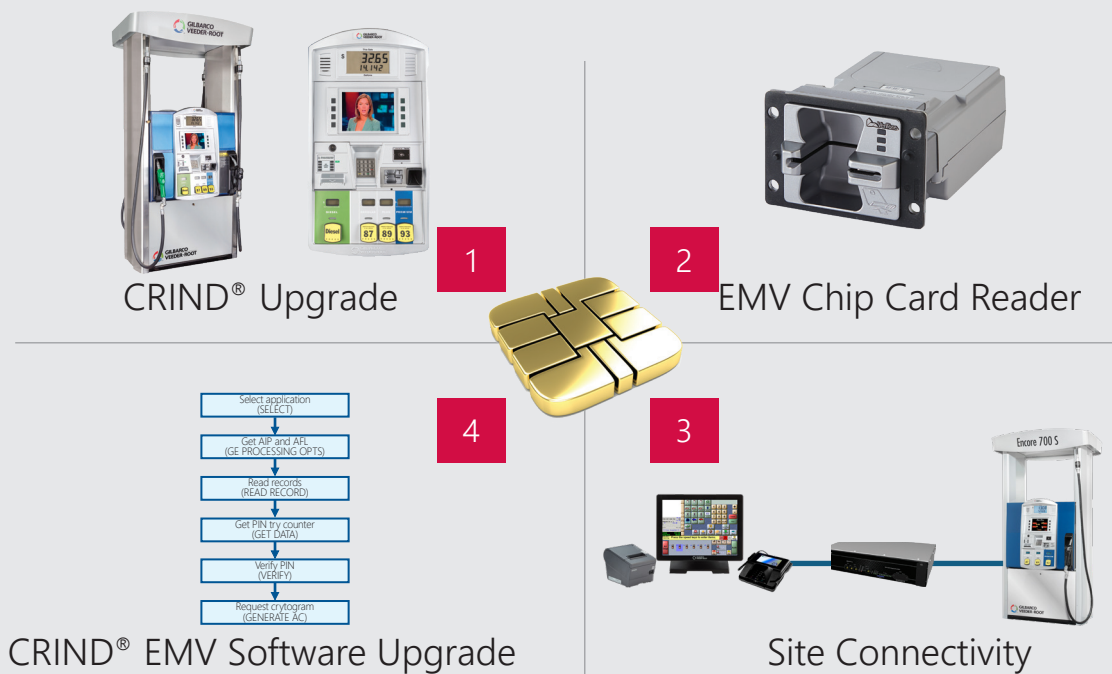
Forecourt Payment Products

EMV Building Blocks

To support EMV transactions at the forecourt, four primary building blocks are required:

1. CRIND® Upgrade – Dispenser Payment Terminal (CRIND®) certified to support EMV payments
2. EMV Chip Card Reader – Card reader capable of accepting a chip card
3. CRIND® EMV Software Upgrade – Forecourt connectivity for high-speed EMV transactions (CAT-5e/6 cable or FlexPay™ Connect)
4. Site Connectivity – Software upgrade and EMV end-to-end certification




Forecourt EMV Building Blocks



Product Overview

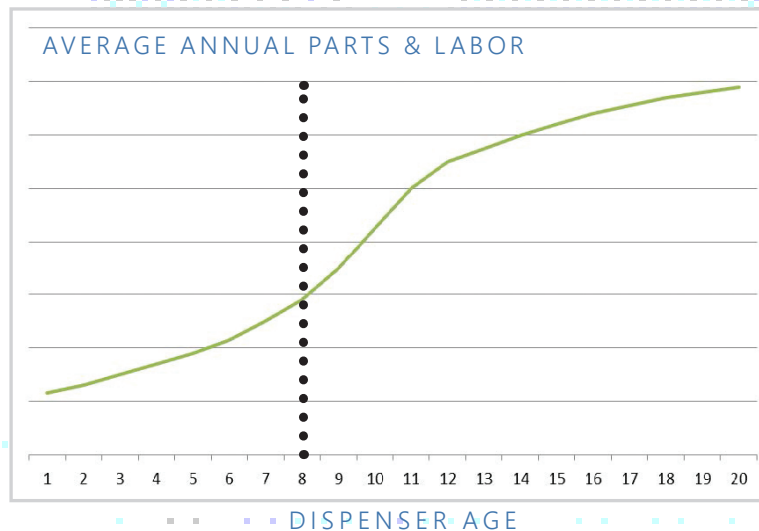
Gilbarco provides retail petroleum owner and operators the ability to upgrade their sites to support EMV across a variety of Gilbarco and competitive dispenser types. This cross-platform upgrade path provides a simpler solution for retailers planning their EMV migrations through POS-to-CRIND[®] protocol development and EMV certifications.

Generally, for dispensers older than 8-years, Gilbarco recommends purchasing new Encore[®] 700 S dispensers to alleviate costs over time.

New Dispenser Purchases		<ul style="list-style-type: none"> For new dispenser purchases, Gilbarco recommends purchasing Encore[®] 700 S dispensers, which come standard with the EMV-certified FlexPay[™] IV CRIND[®]. New Encore[®] 700 S dispensers, with optional Applause[™] TV, come with additional discounts on FlexPay[™] Connect. (See below or page 29.)
Dispenser Retrofits		<ul style="list-style-type: none"> For existing Gilbarco dispensers other than the Encore[®] 700 S, Gilbarco offers the FlexPay[™] IV CRIND[®] Retrofit Kit which retrofits: The Advantage, Encore[®] 300, Encore[®] 500, and Encore[®] S dispensers with the same CRIND[®] technology that is available in the Encore[®] 700 S. The FlexPay[™] IV Retrofit Kits come with a color screen, CRIND[®] electronics, Encrypting PIN pad (EPP), and Hybrid Card Reader (HCR) mounted directly to the door – simplifying the installation process. Retrofit kits with Applause[™] TV come with additional discounts on EMV communications equipment.
EMV Hybrid Card Reader Chip & Mag-Stripe		<ul style="list-style-type: none"> The EMV Hybrid Card Reader (HCR) is a required option on the FlexPay[™] IV CRIND[®] for accepting EMV transactions.
FlexPay [™] Connect High-Speed Connectivity		<ul style="list-style-type: none"> Provides the ability to implement high-speed communications over existing twisted pair or two-wire forecourt infrastructure (see page 29 for details).
EMV Software Upgrade		<ul style="list-style-type: none"> Required to enable software in the CRIND[®] that will perform EMV transaction processing ("turning on EMV"). Additional site visit will be required.

Replace or Retrofit Older Dispensers?

Make the most of your EMV investment by understanding when to replace and when to retrofit your existing dispensers.



Reasons for Replacing Older Dispensers:

- Increasing Cost of Maintenance: As dispensers age, the average cost of maintaining the pump equipment / hydraulics can increase over time due to normal wear and tear on the equipment.
 - » Globally, we have seen that dispensers in the field longer than 8 years have higher than average maintenance costs.
 - » This cost can justify the purchase of a new dispenser versus retrofitting an older dispenser.
- Improved Site Image: Purchasing new dispensers can also improve the image of the site and make it more desirable for customers
- Increased Traffic: Globally, we have seen that enhanced and modernized sites drive increased traffic.

Gilbarco Recommendations

Replace

- Tokheim Premier B & C
- Wayne Vista
- Gilbarco Advantage
- Gilbarco Encore® 500
- Gilbarco Encore® 300
- Gilbarco Encore® S

Retrofit

- Gilbarco Encore® S ECIM

FlexPay™ IV Retrofit Kits

	The Advantage	Encore® 300	Encore® 500	Encore® S	Encore® S ECIM	Encore® 700 S
Dispenser						
Prod Years	1990-2003	2002-2013	2000-2005	2006-2007	2008-Present	2011-Present
FlexPay™ IV Retrofit Kit						N/A
Pg	20	18	16	14	12	10

EMV Upgrade Process: Encore® 700 S



EMV Hybrid Card
Reader
(Chip & Mag-Stripe)

Current Dispenser: Encore® 700 S

PRODUCTION DATE: 2011-Present

EMV UPGRADE PATH

- If not purchased as a factory installed option, upgrade with an EMV hybrid chip card reader, the HRC-S. (FlexPay II only)
- Enhance site wiring with FlexPay™ Connect for high-speed EMV transactions.

STANDARD FEATURES

- Encrypting PIN Pad (EPP)
- Hybrid Card Reader (HCR)
- 5.7" Color Screen

UPGRADE OPTIONS

- 10.4" Color Screen
- Applause™ TV
- EPP Heater
- Cash Acceptor
- Contactless Card Reader (NFC)¹
- 2D Barcode Scanner
- Additional dispenser options shown in GPL-1500

PRODUCT NOTES

1. TRIND® and Contactless Card Readers are not available on the same dispenser.

EMV Upgrade Process: Encore®S ECIM



Encore® S ECIM
FlexPay™ IV Retrofit Kit

Current Dispenser: Encore® ECIM

PRODUCTION DATE: 2008-Present

EMV UPGRADE PATH

- Option 1: Replace with an Encore® 700 S dispenser with an HCR chip card reader.
- Option 2: Upgrade the CRIND® with a FlexPay™ IV CRIND® Retrofit Kit with an EMV hybrid chip card reader.
- Enhance site wiring with FlexPay™ Connect for high-speed EMV transactions.

STANDARD FEATURES

- Encrypting PIN Pad (EPP)
- Hybrid Card Reader (HCR)
- 5.7" Color Screen

UPGRADE OPTIONS

- ☐ 10.4" Color Screen
- ☐ Applause™ TV
- ☐ EPP Heater
- ☐ Cash Acceptor
- ☐ Contactless Card Reader (NFC)¹
- ☐ Barcode Scanner
- ☐

PRODUCT NOTES

1. TRIND® and Contactless Card Readers are not available on the same dispenser.

EMV Upgrade Process: Encore®S ECIM



Encore® S
FlexPay™ IV Retrofit Kit

PRODUCTION DATE: 2006-2007

EMV UPGRADE PATH

- Option 1: **RECOMMENDED** - Due to the age of the Encore® S dispensers, we recommend replacing with an Encore 700 S dispenser with an HCR chip card reader.
- Option 2: Upgrade the CRIND® with a FlexPay™ IV CRIND® Retrofit Kit with an EMV hybrid chip card reader.
- Enhance site wiring with FlexPay™ Connect for high-speed EMV transactions.

STANDARD FEATURES

- Encrypting PIN Pad (EPP)
- Hybrid Card Reader (HCR)
- 5.7" Color Screen
- Full dispenser door, including ECIM insert (effectively converting it from an
- Encore® S to an Encore® S ECIM)

UPGRADE OPTIONS

- ☐ 10.4" Color Screen
- ☐ Applause™ TV
- ☐ EPP Heater
- ☐ Cash Acceptor
- ☐ Contactless Card Reader (NFC)¹
- ☐ Barcode Scanner

PRODUCT NOTES

1. TRIND® and Contactless Card Readers are not available on the same dispenser.

EMV Upgrade Process: Encore® 500



RECOMMENDED REPLACEMENT

Due to the age of the Encore® 500 dispensers, we recommend replacing with an Encore® 700 S dispenser with an HCR chip card reader.



Encore® 500
FlexPay™ IV Retrofit Kit

Encore® 500

PRODUCTION DATE: 2000-2005

EMV UPGRADE PATH

- Option 1: **RECOMMENDED** – Due to the age of the Encore® 500 dispensers, we recommend replacing with an Encore® 700 S dispenser with an HCR chip card reader.
- Option 2: Upgrade the CRIND® with a FlexPay™ IV CRIND® Retrofit Kit with an EMV hybrid chip card reader.
- Enhance site wiring with FlexPay™ Connect for high-speed EMV transactions.

STANDARD FEATURES

- Encrypting PIN Pad (EPP)
- Hybrid Card Reader (HCR)
- 5.7" Color Screen
- Hengstler USB printer (only for units built prior to Jan 5, 2005)

UPGRADE OPTIONS

- ☐ 10.4" Color Screen
- ☐ Applause™ TV
- ☐ EPP Heater
- ☐ Cash Acceptor
- ☐ TRIND® (Speedpass)¹

PRODUCT NOTES

1. TRIND® and Contactless Card Readers are not available on the same dispenser.

EMV Upgrade Process: Encore® 300



RECOMMENDED REPLACEMENT

If purchased prior to 2005, we recommend replacing with the Encore® 300 with an Encore® 700 S dispenser with an HCR chip card reader.



Encore® 300
FlexPay™ IV Retrofit Kit

Encore® 300

PRODUCTION DATE: 2002-2013

EMV UPGRADE PATH

- Option 1: If purchased prior to 2011, we RECOMMEND replacing with an Encore® 700 S dispenser with an HCR chip card reader.
- Option 2: Otherwise, upgrade the CRIND® with a FlexPay™ IV CRIND® Retrofit Kit with an EMV hybrid chip card reader.
- Enhance site wiring with FlexPay™ Connect for high-speed EMV transactions.

STANDARD FEATURES

- Encrypting PIN Pad (EPP)
- Hybrid Card Reader (HCR)
- 5.7" Color Screen
- Hengstler USB printer (same printer shipped in Encore® S and 700 S dispensers)

UPGRADE OPTIONS

- ☐ 10.4" Color Screen
- ☐ Applause™ TV
- ☐ EPP Heater
- ☐ Contactless Card Reader (NFC)¹
- ☐ Barcode Scanner

PRODUCT NOTES

1. TRIND® and Contactless Card Readers are not available on the same dispenser.
2. Cash acceptors are not supported with Encore® 300 dispensers (space limitations on the CRIND® door)

EMV Upgrade Process: The Advantage



RECOMMENDED REPLACEMENT

Due to the age of The Advantage dispensers, we recommend replacing with an Encore® 700 S dispenser with an HCR chip card reader.



The Advantage
FlexPay™ IV Retrofit Kit

The Advantage

PRODUCTION DATE: 1990-2003

EMV Upgrade Path

- Option 1: **RECOMMENDED** – Due to the age of The Advantage dispensers, we recommend replacing with an Encore® 700 S dispenser with an HCR chip card reader.
- Option 2: Upgrade the CRIND® with a FlexPay™ IV CRIND® Retrofit Kit with an EMV hybrid chip card reader.
- Enhance site wiring with FlexPay™ Connect for high-speed EMV transactions.

STANDARD FEATURES

- Encrypting PIN Pad (EPP)
- Hybrid Card Reader (HCR)
- 5.7" Color Screen¹
- Hengstler USB printer (same printer shipped in Encore® S and 700 S dispensers)

UPGRADE OPTIONS

- ☐ Applause™ TV
- ☐ EPP Heater
- ☐ Contactless Card Reader (NFC)²
- ☐ Barcode Scanner

PRODUCT NOTES

1. 10.4" color screen is not available on the Advantage FlexPay™ IV Retrofit Kit
2. TRIND® and Contactless Card Readers are not available on the same dispenser.

Reimage Kit Options

Features:

- ONE PRICE regardless of brand or model – simplifying the quoting and ordering process
- The highest quality factory graphics for a new-dispenser like appearance

Base Graphics Kit Includes

- All custom-branded bezel door graphic overlays
- Factory lower door assemblies with preapplied graphics and door locks

Options Include

1. Side Sheathing
 - Includes both inner and outer sheathing
 - Choose from painted or stainless
 - Choose from flat or formed tuxedo
2. Custom Canopy
 - Choose from three Encore® designs brand view, rectangular, or rounded
 - Replacement bezel doors for Encore® dispensers including custom colors to meet branding specifications



As you upgrade for EMV, it's a great time to get a branding facelift with Gilbarco Reimage Kits for Encore® and The Advantage® dispensers.

High-Speed Site Connectivity

As new technologies come to the forecourt, the communications requirements are shifting from low-speed (e.g. dial-up) to high-speed (e.g. cable internet). Most retail fueling sites contain either twisted pair wiring or current loop (two-wire) running to the forecourt, which today only supports narrowband communications. As a result, retailers will need to upgrade their sites to support high-speed IP-based communications to the dispenser.

Enhanced Site Connectivity

1. EMV Processing Speeds – In order to maintain current transaction speeds with EMV, high-speed connectivity and an IP-based protocol will be required.
2. Forecourt Media Applications – High-speed broadband connection is required to stream video and audio media content to the forecourt for Applause.
3. Remote Management Applications – Cloud-based applications, like Insite360, currently in development include Remote Management of forecourt equipment and Asset Management tools that assist retailers complying with PCI DSS requirements.

Options for Upgrading Site Connectivity

1. Install Ethernet CAT5e/CAT6 cabling – A reliable solution for increasing bandwidth and achieving the data rates needed for EMV and other forecourt applications. CAT5e/CAT6 has a length limitation for larger sites in that it cannot exceed 280 ft. from the backroom to the farthest dispenser. For existing sites, pulling new cabling can often involve digging concrete, which can lead to significant costs in downtime, construction, and revenue loss.
2. Deploy FlexPay™ Connect over existing site wiring – Provides the ability to implement high-speed communications over existing twisted pair or two-wire forecourt infrastructure. Twisted pair wiring is recommended to ensure communications integrity. Eliminates the expense of breaking ground to pull new wire to the forecourt and can be used for distances up to 3000 ft. If this connection fails or is degraded, new twisted pair wiring is required to be installed.

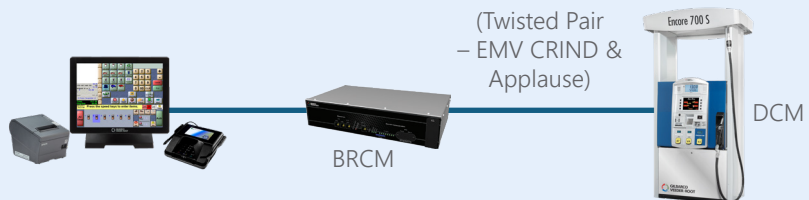
FlexPay™ Connect is Comprised of the Following Concepts

1. Backroom Communications Module (BRCM) – Ethernet switch that converts the Ethernet signal to make use of existing twisted pair wiring.
2. Dispenser Communications Module (DCM) – Converts the signal back into Ethernet in the dispenser (1 DCM is required in each)

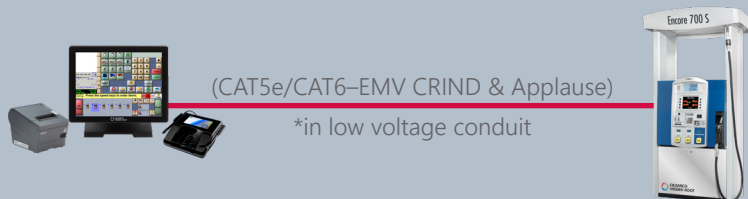
Site Wiring Configurations (EMV and Applause™ TV)

To support EMV at the forecourt (with or without Applause™ TV):

Current: Twisted Pair
Needed: BRCM and DCM

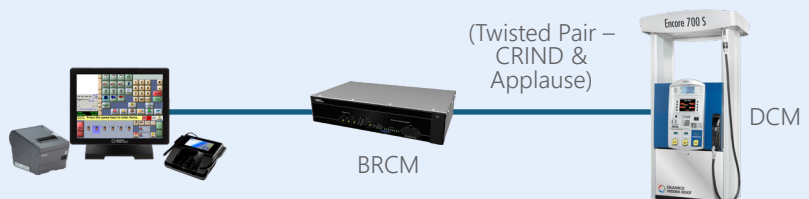


Current: CAT5e/CAT6
Needed: No additional equipment
Note: Length limitation of 280 ft from backroom to farthest dispenser

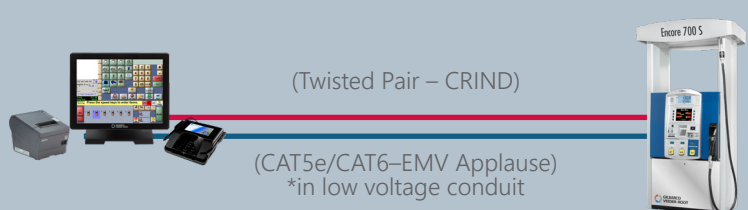


To support Applause™ TV at the forecourt in advance of EMV migrations (non-EMV):

Current: Twisted Pair without spare set available
Needed: BRCM, DCM



Current: CAT5e/CAT6
Needed: No additional equipment
Note: Length limitation of 280 ft from backroom to farthest dispenser



Marketing Applications

While EMV could be a costly upgrade, Gilbarco's innovative approach to payment compliance provides not only a path to support EMV, but also an exciting business opportunity. Gilbarco has a suite of technology solutions that can help retailers generate a return on investment, improve their site profile, engage consumers at the pump, and upsell consumers inside the store.

Applause™ TV with GSN®

Grow In-Store Sales:

Applause™ TV brings multiple tools to drive consumers inside the store.

- On-demand couponing – proven to show a 5% print rate
- Retailer-specific, customizable advertising by day part and location
- National advertising promotions
- Case studies have shown over 20% sales lift on promoted items



Differentiate a Site:

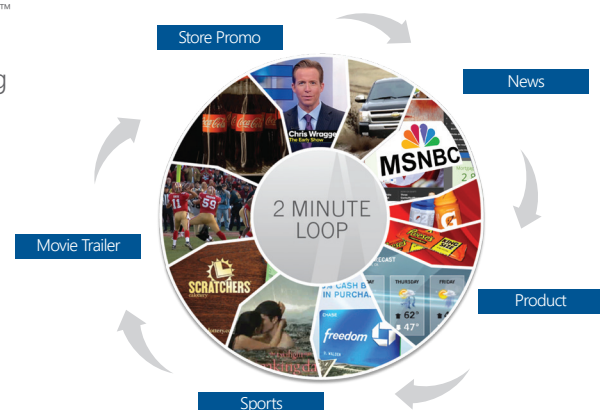
Applause™ TV differentiates a site from other sites by improving the site profile and providing an engaging fueling experience.

- Localized weather forecasts, news and sports updates
- 10.4" color screen with full-motion video and rich audio
- Connect with the community with amber alerts

Subsidize the EMV Investment:

When upgrading a site to become EMV ready, Applause™ TV can subsidize the cost of the communications equipment needed for EMV transactions. When ordering Applause™ TV on new dispensers or retrofit kits, retailers may get subsidies on the following equipment:

- FlexPay™ Connect (BRM and DCM)
- TBM2 (when required)
- UPS (Uninterruptible Power Supply)
- 8 Port-Router
- Applause™ Server
- 10.4" Color Screen

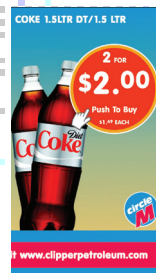
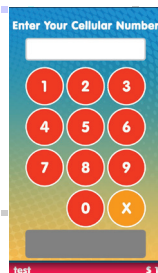


Impulse

Engage, Convert, Learn

Impulse is Gilbarco's customer engagement platform that integrates with the Passport point of sale system to interact with customers via games and digital punch cards to increase sales as well as deliver targeted recommendations via an additional touch screen at the point of sale.

- 10" touch screen shows targeted promotions, surveys, basic loyalty, digital punch cards and interactive games at the register
- The cashier screen shows a prompt to the cashier, and the consumer sees a corresponding promotion
- Increases sales 3-5% on targeted categories





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