



To discuss how Phitek can help you create the ultimate in-flight experience, contact us:

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Let ideas  
take flight

PRODUCT RANGE



Helping you create the  
ultimate in-flight experience



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# Creating smarter products for the ultimate in-flight experience

Phitek is the world's leading supplier of electronic innovations in noise cancellation, audio enhancement and other electronic touch points in the aircraft cabin.

Phitek's proprietary active noise-cancellation technology is now specified by major airlines and sourced by all of the major manufacturers of in-flight entertainment systems.

Phitek is based in Auckland, New Zealand, with representation in USA, the UK and France.



Best Design Awards  
Winner 2016



## Connect Smart

Our cost-effective connector solutions open up a whole new world of in-seat connectivity. The Phitek SmartJack™ incorporates noise-cancelling electronics, and Phitek's magnetic jacks mean that expensive pin breakage is a thing of the past.

We can supply jacks for any configuration of cut-outs, and pin layouts, promptly and cost-effectively.



## Listen Smart

Phitek is the leader in premium in-flight noise-cancelling headphones that deliver concert-quality sound. Our advanced technology helps create the ultimate in-flight listening experience by eliminating background noise and outperforming the competition on all critical points – clarity, comfort, design, longevity and reliability.



## View Smart

Stream in-flight entertainment services directly to passengers' own devices. The Phitek Content Delivery System is a portable Wi-Fi device with a capacity to stream HD video concurrently to up to 50 devices. It eliminates the need for aircraft modifications and does not require an external power supply.



## Future Smart

Experience further enhanced Phitek audio performance combining the next generation digital magnetic jacks and headphones. All Phitek MJU™ technology is designed to last 250,000 connection cycles, which is significantly longer than any other aircraft audio jack or USB audio. By going digital, cutting edge features such as virtual surround sound, gesture control and biometric sensors are all part of the future passenger experience.



Gesture Control



# Smart products and expert engineering services

We work closely with our customers to provide turnkey aircraft-certified hardware solutions that offer longevity and ease of serviceability, lowering lifetime operational costs.

## Engineering Services

### General

- Electronic hardware
- Software
- Production
- Test systems
- Mechanical
- Industrial designers

### Specialist

- Acoustic scientists
- Aviation certification engineers
- Aviation hardware project managers

## Connect Smart



SMART PASSENGER INTERFACE MODULE (Thales SmartPIM™)



SEAT BACK MULTIJACK



MAGNETIC PLUG



MAGNETIC JACK

## Listen Smart



NOISE-CANCELLATION HEADPHONES



INTEGRATED ACTIVE NOISE CANCELLATION



PHICHECK™

## View Smart

Stream in-flight entertainment services direct to passengers' own devices



PHITEK CONTENT DELIVERY SYSTEM

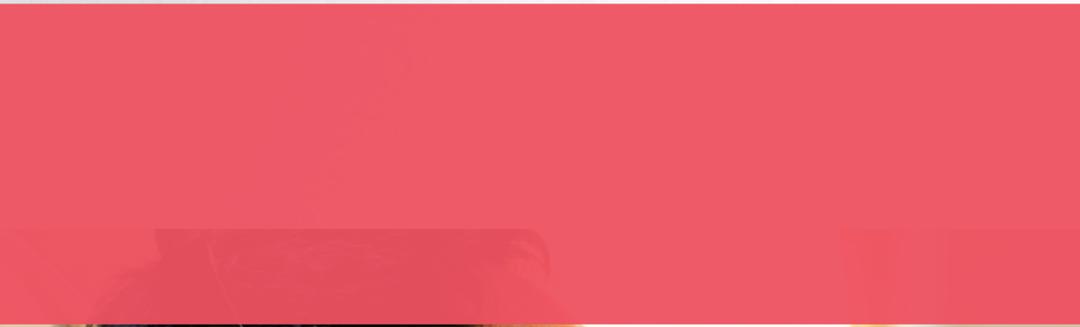
## Future Smart



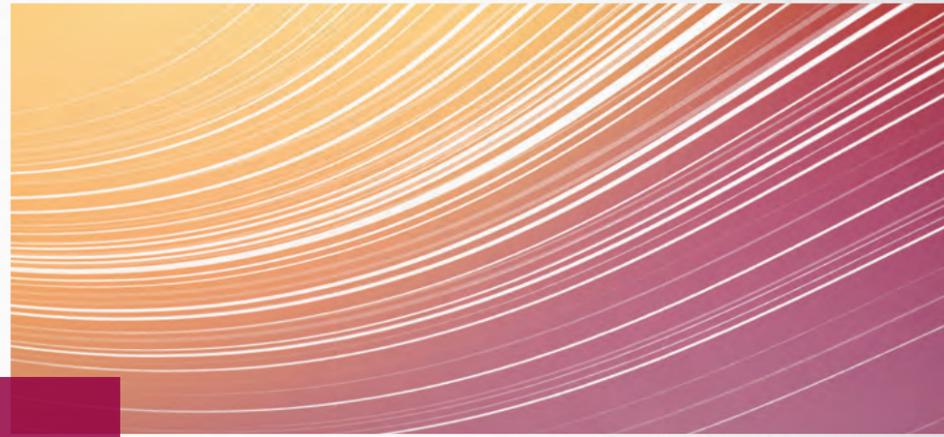
STATE-OF-THE-ART DIGITAL SOUND



250,000 REASONS TO GO MAGNETIC



Featured products and technical specifications



# Connect Smart

## Uninterrupted passenger entertainment

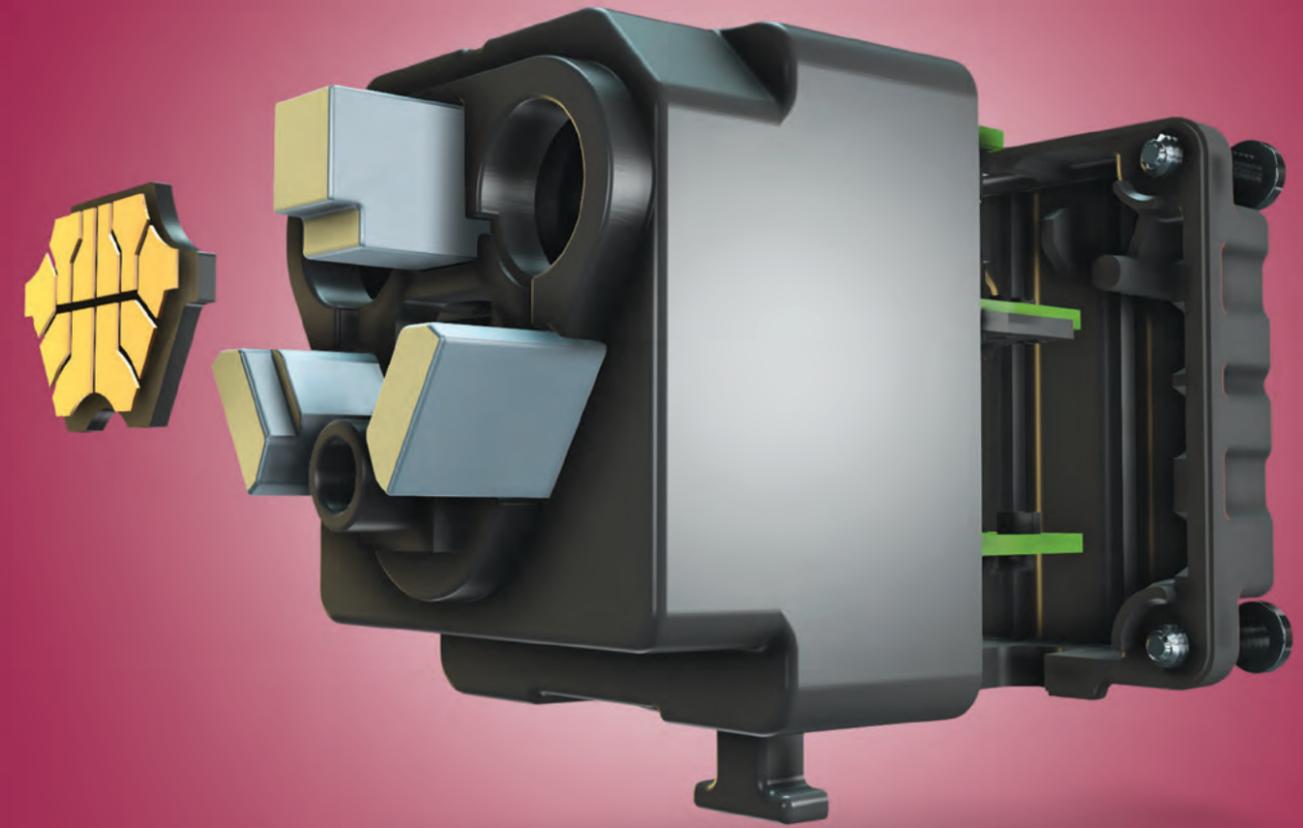
- Headphone cable pin breakage is a thing of the past.
- Headphone plugs are automatically released when passengers pull their headphone cord with force (7N or more).

## Unique design for seamless system integration

- Compatible with all headphone types due to our patented plug-type detection and switching technology.
- Integrate with all IFE systems.
- Available in a variety of shapes for in-arm and seat back chassis installation.

## Significant cost savings

- 10x more connection cycles compared with standard aircraft audio jacks.
- The longest-lasting jacks in the aviation industry.



TRIANGLE CUT-OUT



SQUARE CUT-OUT



OBROUND CUT-OUT



SEAT BACK DISPLAY



REPLACEMENT INSERT MODULE



# Triangle Magnetic Jack Unit™ (MJU™)

## MAGNETIC ACTIVE NOISE-CANCELLATION JACK

The magnetic MJU™ is the world's longest-lasting aviation jack, capable of 10x more connection cycles compared with standard aircraft audio jacks. This jack is compatible with all existing headphone types including all active noise-cancelling headphones.

The MJU™ eliminates pin breakage by passengers and related operational IFE loss at the seat. When used with Phitek's MJ-Plug™, this unique magnetic jack guards against the most common passenger damage to headphone cables, by automatically releasing the headphone plug when a tugging force of more than 7N is applied in any direction.

FEATURES
Rated to 250,000 connection cycles.
Fits in standard audio jack panel cut-outs.
Additional integrated short circuit protection.
Automatic A1 switching.



HEADPHONE COMPATIBILITY			
TRIANGLE MAGNETIC JACK UNIT™ (MJU™) – PART NUMBER 2VFIIB-XXXXX			
HEADPHONE TYPE	LEGACY ARINC PIN CONNECTOR		MJ-Plug™ ACTIVE TERMINALS
AUDIO ONLY HEADPHONES	AI SINGLE PIN	A2 DUAL PIN	Different terminals are activated depending on headphone type.
High impedance >100 ohm.			A1 / A2 equivalent  
AUDIO ONLY HEADPHONES	BI SINGLE PIN	B2 DUAL PIN	Different terminals are activated depending on headphone type.
Low impedance <100 ohm.			B1 / B2 equivalent  
JACK POWERED NOISE-CANCELLATION HEADPHONES	C2 TRIPLE PIN		Different terminals are activated depending on headphone type.
Headphones that have active noise cancellation powered by a 12V aircraft jack.			C1 / C2 equivalent  
JACK ENABLED NOISE-CANCELLATION HEADPHONES	C2 MOD TRIPLE PIN	D2 DUAL PIN	Different terminals are activated depending on headphone type.
Headphones that utilise the noise-cancellation electronics, integrated in the aircraft jack.			C2 MOD / D2 equivalent  

TRIANGLE MAGNETIC JACK UNIT™ (MJU™)	
<b>SPECIFICATIONS</b>	
<b>IDENTIFICATION</b>	
Part number	2VFIIB-XXXXX
<b>POWER</b>	
Power consumption	<600mW (incl. Phitek jack powered headphone)
<b>PHYSICAL</b>	
Total unit weight	<40g (1.41oz)
Unit dimensions	26.3mm x 23mm x 24mm (1.04" x 0.91" x 0.94")
Seat cut-out compatibility	Drop-in replacement for RD-NAI010-XX and other triangular shaped audio connectors
<b>COMPATIBILITY</b>	
ARINC connector options	ARINC A1, A2, B1, B2, C2, C2 Modified, D2, MJ-Plug™

# Obround Magnetic Jack Unit™ (MJU™)

SCALABLE CONNECTOR FOR ALL CABIN CLASSES

The Obround Magnetic Jack replaces two-pin economy connectors as either a retrofit or line-fit solution.

The jack connects to a wide range of headphone types including legacy ARINC standard plugs, as well as headphones using Phitek's MJ-Plugs™.

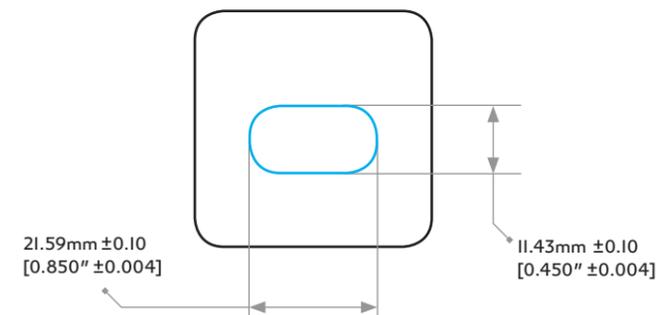
FEATURES
Rated to 250,000 connection cycles.
Automatic A1 switching.
Compatible with passenger devices.



HEADPHONE COMPATIBILITY			
OBROUND MAGNETIC JACK UNIT™ (MJU™) – PART NUMBER 2VF18A-XXXXX			
HEADPHONE TYPE	LEGACY ARINC PIN CONNECTOR		MJ-Plug™ ACTIVE TERMINALS
AUDIO ONLY HEADPHONES	AI SINGLE PIN	A2 DUAL PIN	Different terminals are activated depending on headphone type.
High impedance >100 ohm.			A1 / A2 equivalent 
AUDIO ONLY HEADPHONES	BI SINGLE PIN	B2 DUAL PIN	Different terminals are activated depending on headphone type.
Low impedance <100 ohm.			B1 / B2 equivalent 

OBROUND MAGNETIC JACK UNIT™ (MJU™)	
SPECIFICATIONS	
IDENTIFICATION	
Part number	2VF18A-XXXXX
PHYSICAL	
Total unit weight	<28g (1.00oz)
Unit dimensions	26.9mm x 30.9mm x 30.0mm (1.06" x 1.22" x 1.18")
Seat cut-out compatibility	Drop-in replacement for obround shaped pass-through audio connectors

CLEVERLY FITS IN SMALL PANEL CUT-OUTS



# Square Magnetic Jack Unit™ (MJU™)

HEADPHONE CABLE PIN BREAKAGE IS A THING OF THE PAST

The Square Magnetic Jack Unit is a drop-in replacement for existing audio remote jack units, integrating the world's longest-lasting aviation audio jacks with all IFE systems.

The jack contains Phitek's patented plug-type detection and switching technology. This enables connection to a wide range of headphone types including most traditional ARINC standard plugs, as well as any headphone type using Phitek's MJ-Plugs™.

FEATURES
Rated to 250,000 connection cycles.
Drop-in replacement for Panasonic eX series jacks.
Noise cancellation technology incorporated in the jack allows for significantly reduced headphone cost.



HEADPHONE COMPATIBILITY			
SQUARE MAGNETIC JACK UNIT™ (MJU™) – PART NUMBER 2VF31A-XXXXX			
HEADPHONE TYPE	LEGACY ARINC PIN CONNECTOR		MJ-Plug™ ACTIVE TERMINALS
AUDIO ONLY HEADPHONES	AI SINGLE PIN	A2 DUAL PIN	Different terminals are activated depending on headphone type.
High impedance >100 ohm.			AI / A2 equivalent 
AUDIO ONLY HEADPHONES	BI SINGLE PIN	B2 DUAL PIN	Different terminals are activated depending on headphone type.
Low impedance <100 ohm.			BI / B2 equivalent 
JACK POWERED NOISE-CANCELLATION HEADPHONES	C2 TRIPLE PIN		Different terminals are activated depending on headphone type.
Headphones that have active noise cancellation powered by a 12V aircraft jack.			C1 / C2 equivalent 
JACK ENABLED NOISE-CANCELLATION HEADPHONES	C2 MOD TRIPLE PIN	D2 DUAL PIN	Different terminals are activated depending on headphone type.
Headphones that utilise the noise-cancellation electronics, integrated in the aircraft jack.			C2 MOD / D2 equivalent 

SQUARE MAGNETIC JACK UNIT™ (MJU™)	
SPECIFICATIONS	
<b>IDENTIFICATION</b>	
Part number	2VF31A-XXXXX
<b>POWER</b>	
Power consumption	<600mW (incl. Phitek jack powered headphone)
<b>PHYSICAL</b>	
Total unit weight	<28g (1.00oz)
Unit dimensions	38.50mm x 31.50mm x 30.40mm (1.52" x 1.24" x 1.20")
Seat cut-out compatibility	Drop-in replacement for RD-FA6293-XX and RD-FA6283-XX

# Seat Back Display Magnetic Jack Unit™ (MJU™)

## MAGNETIC JACK INSERT

Makes costly headphone cable pin breakage a thing of the past. Now if force is exerted on the cable, the magnetic connection simply releases with no damage done ensuring uninterrupted passenger entertainment.

- FEATURES**
- Available as a drop-in replacement for standard seat back display audio sockets.
  - Audio rated to 250,000 connection cycles.



HEADPHONE COMPATIBILITY			
SEAT BACK DISPLAY MAGNETIC JACK UNIT™ (MJU™)			
HEADPHONE TYPE	LEGACY ARINC PIN CONNECTOR	MJ-Plug™ ACTIVE TERMINALS	
AUDIO ONLY HEADPHONES	AI SINGLE PIN	Different terminals are activated depending on headphone type.	
High impedance >100 ohm.		AI / A2 equivalent	

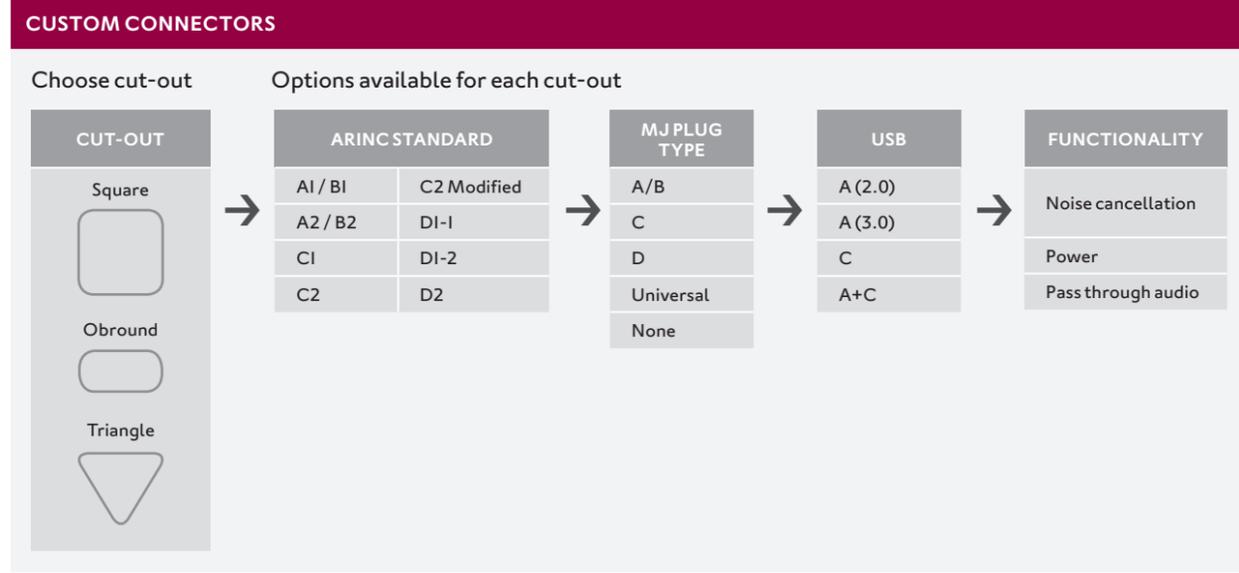


SEAT BACK DISPLAY MAGNETIC JACK UNIT™ (MJU™)	
SPECIFICATIONS	
PHYSICAL	
Total unit weight	40g (1.4oz)

# Custom Connectors – Fast and Flexible

SMART CONNECTORS FOR ALL CONFIGURATIONS

We understand that different airlines have different configurations of seat cut-outs, features and pin standards and we can custom-build promptly to suit your audio, noise cancelling and power requirements.



# Thales SmartPIM™

## SMART PASSENGER INTERFACE MODULE – IN-ARM AND REMOTE CHASSIS

### Enabling a multitude of connections – now and in the future.

The Thales SmartPIM™ is designed for Thales IFE systems and future-proofs the on-board connection of laptops, headphones, iPods and tablets. The SmartPIM™ also provides IFE features including: device charging; integrated Phitek active noise cancellation; and the streaming of tablet media to IFE screens.

#### FEATURES

Airline self-upgradable connection options (differentiated service offering by cabin/seat).

Elimination of cabin noise with integrated Phitek active noise cancellation.

Cost-effective method to offer new and evolving IFE features to passengers through easily replaceable modules.

Accommodates evolving passenger device connection requirements.

Rapid airline serviceable connector replacement.

Dozens of different connector configurations.



THALES

### SMART PASSENGER INTERFACE MODULE – SEAT BACK CHASSIS

Designed by Phitek, the SmartPIM™ exchangeable module chassis provides operational flexibility and future-proofing capability for IFE systems and passenger audio devices. Successfully integrated by Thales into the Crystal Cabin award-winning TopSeries AVANT® system, the SmartPIM™ provides airlines with the same functions as individual remote jack configurations.



#### THALES SMARTPIM™

##### SPECIFICATIONS

##### IDENTIFICATION – CHASSIS PART NO.

In-arm	254548-XX
Remote	254525-XX
Seat back	183657-XXXXX

##### POWER

Operating voltage	18V – 34V
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##### PHYSICAL – WEIGHT

In-arm	84g (2.96oz)
Remote	99g (3.49oz)
Seat back	82g (2.89oz)

**THALES SMARTPIM™ MODULES  
CURRENT CONNECTOR OPTIONS**

A wide range of airline audio connectors are available including an advanced integrated active noise-cancelling magnetic audio jack. Phitek also designs connectors for data transfer and charging that work seamlessly with passenger devices.



AI / BI



C2 MODIFIED



USB



D2



MAJI  
(MAGNETIC JACK)

**THALES**

**THALES SMARTPIM™ MODULES  
FUTURE CONNECTOR OPTIONS**

Thales SmartPIM™ design gives airlines the power to anticipate tomorrow's consumer devices with open-ended, seat customisation options – by budget, cabin or route.



IR WIRELESS AUDIO



BARCODE SCANNER



TRAY TABLE LIGHT



BLUETOOTH

**THALES**



WI-FI

# SmartJack™

## ACTIVE NOISE-CANCELLATION JACK

The SmartJack™ is a cost-effective way to provide passengers with Phitek active noise cancellation without requiring the more expensive investment in headphones with integrated noise-cancellation electronics. Simply plug compatible headphones into the SmartJack™ and it will do all the hard work.

FEATURES
Easy installation and maintenance.
Multiple ARINC compatibility in a single jack for flexibility of use with legacy aircraft headphones.
ARINC A1 compatibility enables passengers to use their own personal audio headphones.



RD-NA1010-XX

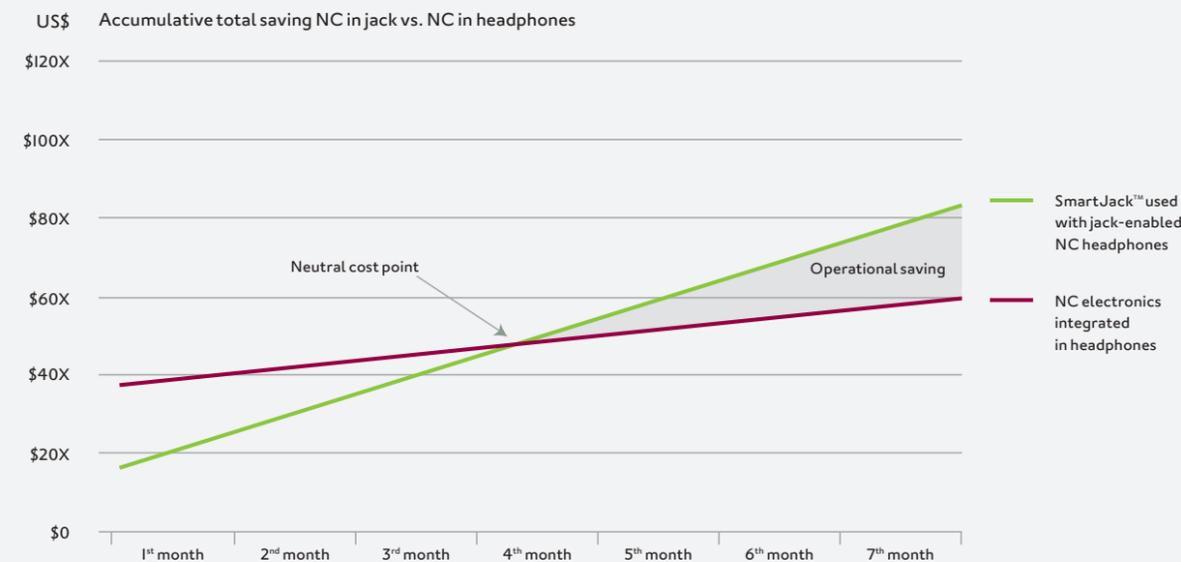
SmartJack™ TRIANGLE CUT-OUT



RD-FA6293-XX

SmartJack™ SQUARE CUT-OUT

### TOTAL COST OF OPERATION



SMARTJACK™ TRIANGLE	
<b>SPECIFICATIONS</b>	
<b>POWER</b>	
Power consumption	<200mW
<b>PHYSICAL</b>	
Total unit weight	28g (0.99oz)
Unit dimensions	23mm x 22.4mm x 23.8mm (0.91" x 0.88" x 0.94")
<b>COMPATIBILITY</b>	
Headphones types	Compatible headphones: Low impedance stereo (30-100 ohm), high impedance stereo (100-330 ohm), jack-enabled and jack-powered active noise cancellation. If used with PAC Eco or PAC Elite monitors then compatible with low impedance only.
ARINC connector options	ARINC A2, B2, C2, C2 Modified, D2

SMARTJACK™ SQUARE	
<b>SPECIFICATIONS</b>	
<b>POWER</b>	
Power consumption	<400mW
<b>PHYSICAL</b>	
Total unit weight	28.5g (1oz)
Unit dimensions	38mm x 31mm x 23.4mm (1.50" x 1.22" x 0.92")
<b>COMPATIBILITY</b>	
Headphones types	Compatible headphones: Low impedance stereo (30-100 ohm), high impedance stereo (100-330 ohm), jack-enabled and jack-powered active noise cancellation. If used with PAC Eco or PAC Elite monitors then compatible with low impedance only.
ARINC connector options	ARINC A2, B2, C2, C2 Modified, D2

# MJ-Plug™

Makes costly headphone cable pin breakage a thing of the past. Now if force is exerted on the cable, the magnetic connection simply releases with no damage done.

Designed to fit all Phitek-designed Magnetic Jack products supplied to all IFE vendors. Headphones for all cabin classes are available from a number of accredited headphone suppliers; please contact us for details.

FEATURES
Eliminates pin-shear and resulting IFE loss at the seat.
Maximises lifetime of aircraft jacks.
Extends headphone cable lifetime.
10,000 connection cycles.
Ultra-long service life.

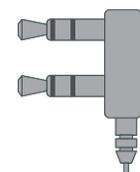
The Magnetic Jack compatibility icons on your headphone plugs indicate that your headphones are manufactured to be compatible with the Magnetic Jack Unit.

ACTIVE TERMINALS  HIGH IMPEDANCE 100-330 Ω	ACTIVE TERMINALS  LOW IMPEDANCE 30-100 Ω
ACTIVE TERMINALS  JACK POWERED 12V	ACTIVE TERMINALS  JACK ENABLED



## COMPARISON WITH TRADITIONAL AUDIO PLUGS

Traditional aviation audio pin connector



Weight: 5g to 12g  
Cost: USD 0.05 to USD 0.09  
Connection cycles: 1,000

MJ-Plug™



Weight: 5g  
Cost: USD 0.09  
Connection cycles: 10,000

## COMPATIBLE ECONOMY HEADPHONES AND EARPHONES

Economy disposable and rotatable headphones from all manufacturers.



MJ-Plug™ COMPATIBILITY	
AI / A2 equivalent 	
BI / B2 equivalent 	

## COMPATIBLE NOISE-CANCELLING HEADPHONES

Noise-cancellation headphones from all manufacturers.



MagPlug™ COMPATIBILITY	
CI / C2 equivalent 	
C2 MOD / D2 equivalent 	

# Dual Port MagJack™

Phitek's Dual Port MagJack™ contains a multitude of safety and backup features into a form smaller than a business card.

## FEATURES

3 different power supplies including high-current USB.

A USB hub.

Integrated active noise cancellation.

Plug type detection.

Plug type switching.

Temperature monitoring.

Current limiting.

PA system override.



## DUAL PORT MAGJACK™

### SPECIFICATIONS

POWER	
Power consumption	<13W
PHYSICAL	
Total unit weight	60g (2.12oz)
Unit dimensions	61.95mm x 38.35mm x 24.55mm (2.4" x 1.5" x 0.97")
COMPATIBILITY	
Headphone types	Audio only headphones Low impedance <100 ohm  Audio only headphones High impedance >100 ohm  Jack powered noise-cancellation headphones  Jack enabled noise-cancellation headphones
ARINC connector options	ARINC A1, A2, B1, B2, C2, C2 Modified, D2
USB	Standard BCI.2 Charging Downstream Port (CDP) power draw requirements up to 7.5W (1.5A @ 5.0V)

### MJ-PLUG™

A1 / A2 equivalent



C1 / C2 equivalent



B1 / B2 equivalent



C2 MOD / D2 equivalent



# Phitek Content Delivery System

STANDALONE PORTABLE WI-FI ENABLED IN-FLIGHT ENTERTAINMENT

The Phitek Content Delivery System is a portable Wi-Fi device that enables in-flight entertainment services to be streamed directly to passengers' own devices. Each device provides two choices of access points in 2.4GHz and 5.0GHz, with a capacity of up to 50 devices concurrently streaming HD video to the passengers' devices. It eliminates the need for aircraft modifications and does not require an external power supply.

The device comes with flexible commercial options, from offering the product as hardware only, to comprehensive service packages. Phitek can provide all the necessary hardware, software, and digital rights management for minimal up-front capital investment by the airline.

FEATURES
High-speed connection for uninterrupted high definition entertainment streaming.
Long battery life for uninterrupted passenger satisfaction, utilizing the safest battery technology for aviation.
No aircraft modifications are necessary.
An adaptable platform for movies and TV shows, digital newspapers or magazines, and opportunity to generate auxiliary revenue.
User friendly interface allows system to be easily used by all demographics.
Secure crew app for device control and passenger announcements.
Rapid charging and content uploading for fast airport turnaround and ease of logistics.
Passive cooling for cluttered environments.
Mesh network intelligence to optimize signal strength.
Automatic redundancy preventing aircraft-wide outages.



**DRIVE ANCILLARY REVENUE** 

Stream in-flight entertainment services direct to passengers' own devices

MOVIES



IN-FLIGHT MAGAZINES



GAMES



PHITEK CONTENT DELIVERY SYSTEM	
SPECIFICATIONS	
<b>PHYSICAL</b>	
Total unit weight	4.5 Kg
Unit dimensions	245mm x 180mm x 95mm (9.65" x 7.09" x 3.74")
Operating temperature	-20°C to +40°C
Storage temperature	-20°C to +50°C
<b>POWER</b>	
Battery chemistry	NiMH
Fully charged battery life	10 hours - Min
<b>INPUTS</b>	
1 x Gigabit ethernet	
1 x USB 2.0	
12V DC Power input	
<b>USER INTERFACE</b>	
Power switch	
Power/Error status LED	
Battery capacity status LEDs	
Play/Pause stream status LED	
Play/Pause push button	
Mode status LED (Sleep/Stream)	
Mode push button	

# Listen Smart

Create the ultimate in-flight experience with Phitek headphones. Our advanced active noise-cancellation technology eliminates unwanted background noise and recreates concert-quality sound.

Our headphones outperform the competition on all critical points: clarity, comfort, design, longevity and reliability.

For more details and product specifications, please refer to our headphones catalogue.



# Phitek Digital Audio

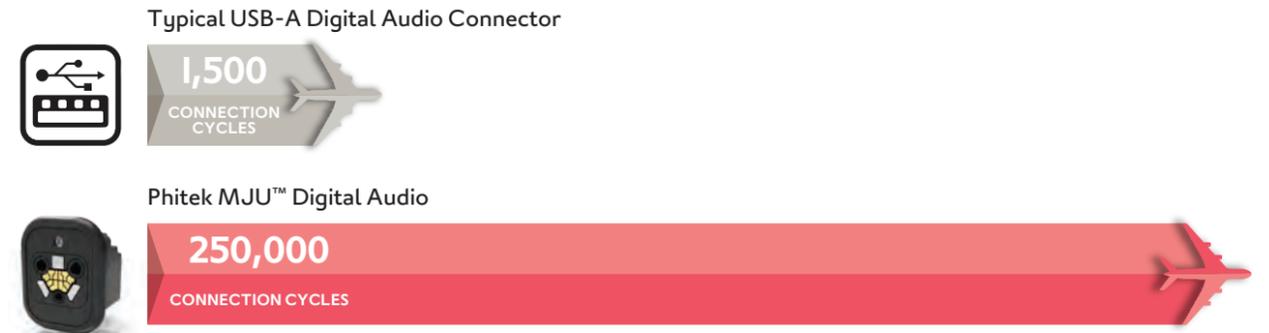
STATE-OF-THE-ART DIGITAL SOUND

Experience further enhanced Phitek audio performance combining the next generation digital magnetic jacks and headphones. Phitek MJU™ Digital Audio is designed to last 250,000 connection cycles, which is significantly longer than any other aircraft audio jack or USB-A digital audio.

- FEATURES**
- Further enhanced Phitek audio performance to meet premium cabin class expectations.
  - Cutting edge features such as virtual surround sound, gesture control and biometric sensors are all part of the digital future.
  - All Phitek MJU™ technology is rated to 250,000 connection cycles.
  - Common cut-out compatibility ensures easy installation for retrofitting aircraft seats.
  - The Digital Magnetic Jack Unit is backward compatible with any analog or passenger headphones.
  - Challenges with impedance matching and noise from the IFE audio are now in the past.



## 250,000 REASONS TO GO MAGNETIC



# PhiCheck™

The PhiCheck™ accurately tests both headphones and connectors enabling airlines to verify that products are delivering the expected performance for passengers.

Simple and quick to use, the airline maintenance crew will require minimal training to operate PhiCheck™. All Phitek headphones and audio jacks, including magnetic jacks, can easily be tested.

The simple go/no-go test will ensure airlines continue to deliver a premium passenger experience. And for the maintenance crew, results may be downloaded for detailed analysis off-line.



## FEATURES

Robust design for use in tough environments.

Built in self-test for reliable performance.

High resolution display for test results review.

Test reports available for statistical analysis.

Operates on any mains worldwide.

## PHICHECK™

### SPECIFICATIONS

#### STANDARDS

Compliant	CE, IEC 61010
Operates on mains	100-240VAC, 50-60Hz

#### PHYSICAL

Test box dimensions	371mm x 267mm x 105mm (14.6" x 10.5" x 4.1")
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