Overview

HP Managed and Unmanaged V2 Notebook Charging Carts

Models

HP 20 Charging Cart V2 **New!**	T9E84AA
HP 20 Mgd Charging Cart V2 **New!**	T9E83AA
HP 30 Charging Cart V2 **New!**	T9E86AA
HP 30 Mgd Charging Cart V2 **New!**	T9E85AA

Introduction

Designed to securely store and charge notebook PCs-from tablets and minis to notebooks with up to a 15.6-inch diagonal screen size-inside the classroom, these innovative carts have a large compartment with up to 30 individual, smooth-edged shelves for easy, quick, and safe loading and unloading by teachers and students, and a separate, locked IT compartment to store notebook power adapters (Charging and Managed Charging Carts) and Ethernet connectors (Managed Charging Carts). The HP 20- and 30-Notebook Charging Carts store and charge 20 or 30 notebooks PCs. The HP 20- and 30-Notebook Managed Charging Carts store and charge 20 or 30 units and include Ethernet cables for convenient batch installation of software updates or virus protection.

Key Features

- **Open Architecture**: Compatible with a large variety of HP and non-HP tablets, netbooks, and notebooks, up to 15.6 inch screen size
- **Smart Charging Technology**: Load-sensing technology directs charging power when and where it's needed most, so each notebook is charged as quickly as possible.
- **Retractable Front Doors**: Two locking, hinged front doors on the notebook bay open from the center and retract into the cart's side channels for neat storage.
- **Removable Shelves**: Lightweight, shelves feature hand cut-outs for easy notebook removal and venting for optimal cooling/airflow. Removable shelves and pegs allow extra storage space inside the cart. Shelf insertion/removal is done through a simple peg and notch system.
- **Service Compartments**: Two locking, removable rear panels allow access to the AC adapters (Charging Cart) and Ethernet cabling (Managed Charging Carts). The top locking panel on the top surface of the cart is removable for access to IT equipment (i.e. WAP/router, Ethernet switch(es) and controller box). For the Managed Charging Carts, switch(es) and WAP/router are purchased separately and customer-installed.
- **Ample Ventilation**: On the Managed Charging Carts, four fans cool the notebooks in the main body of the cart. All fans are always on. Venting is located on both end panels and the front and rear of the cart.
- **Casters**: Four 4-inch medical-grade, dual-wheel custom casters support easy turning and moving over thresholds. All four casters can be locked into place through a foot brake pedal to prevent the cart from rolling. All four casters swivel.
- **Cable Management**:
  - **Internal**: Cable management channel clips keep power (Charging Cart and Managed Charging Carts) and Ethernet cables (Managed Charging Carts) neat and managed inside the cart.
  - **External**: Specially-designed panels located at each end of the cart that provide venting also serve as a recessed cable management wrap for external cabling.
- **Security Features**: Includes a standard key/ lock system for securing the notebook and service compartments. A single key opens all notebook and service compartments of the cart. All compartments are independently secured, restricting user access to only desired compartments. Four keys are included with each cart. **NOTE:** All carts are keyed the same

Compatibility

Overview

HP Managed and Unmanaged Notebook Charging Carts are compatible with tablets, netbooks, and notebooks from 10.1 to 15.6 inch diagonal screen size.

NOTE: Due to height limitations of the notebook bay, the following externally-attached batteries cannot be used with the HP Notebook Charging Carts: AJ359AA, AT486AA, BJ803AA, QK639AA, QK640AA, QK645AA, RX932AA, QK642AA, QK643AA

Service and Support

HP Managed and Unmanaged Notebook Charging Carts are supported by a 3-years on mechanical components and functions and 1-year on electrical components and functions limited warranty. Additional support is available by phone as well as online support forums.

	HP 20 Charging Cart V2	HP 20 Mgd Charging Cart V2	HP 30 Charging Cart V2	HP 30 Mgd Charging Cart V2
Part number	T9E84AA HP 20 Charging Cart V2	T9E83AA HP 20 Mgd Charging Cart V2	T9E86AA HP 30 Charging Cart V2	T9E85AA HP 30 Mgd Charging Cart V2
Notebook Size and Models	Open architecture design is compatible with notebooks up to 15.6” screen size.			
Notebook Weights	Assumed weight per notebook is 1.2-2.64 kg. and battery weight is .22kg - .370kg			
Additional Notebook Battery Options	Cart supports open architecture design and compatibility with notebook batteries that when connected to the notebooks combined dims fit within the bay dimensions listed below. Assumed batteries used for power budget and weight estimates are HP models: AT907AA, BQ352AA, BQ350AA, PB994A, AT901AA, KU531AA, AT908AA, AT486UT, AJ359AA			
Power Adapters	Cart supports open architecture design and compatibility with AC power adapters fitting within the adapter cradle dims listed below (AC power adapters weighing up to .4kg each). Assumed AC adapters used for power budget and weight estimates are HP models: H6Y88AA, H6Y89AA, H6Y90AA, ED494AA, AJ652AA, ED493AA, ED495AA, AU155AA, AZ727AA			
Other Weight Assumptions/ Considerations	Power Control Box, AC power adapters, accessories on top surface of cart.	One Ethernet switch, WAP or wireless router, Power Control Box, RJ-45 cables, AC power adapters, cooling fans, accessories on top surface of cart	Power Control Box, AC power adapters, accessories on top surface of cart	Two Ethernet switches, WAP or wireless router, Power Control Box, RJ-45 cables, AC power adapters, cooling fans, accessories on top surface of cart
Retractable Front Doors	Two steel locking, hinged front doors open from center and retract into side channels for neat storage within 3" from the front of the cart. Notebooks are accessed from the front of the cart (single-sided access)			
Notebook Compartment	Houses up to 20 notebooks. Notebooks are stored loose and flat, they are easy to remove for use and to change cables if necessary. Users manually reconnect power cables when notebooks are returned to the cart to enable charging functionality. Power cables are neatly managed. Weight capacity for bottom surface of notebook	Houses up to 20 notebooks. Notebooks are stored loose and flat, they are easy to remove for use and to change cables if necessary. Users manually reconnect power and Ethernet cables when notebooks are returned to the cart to enable charging and managing functionality. Power and Ethernet cables are neatly managed. Weight capacity for bottom surface of notebook	Houses up to 30 notebooks. Notebooks are stored loose and flat, they are easy to remove for use and to change cables if necessary. Users manually reconnects power cables when notebooks are returned to the cart to enable charging functionality. Power cables are neatly managed. Weight capacity for bottom surface of	Houses up to 30 notebooks. Notebooks are stored loose and flat, they are easy to remove for use and to change cables if necessary. Users manually reconnects power and Ethernet cables when notebooks are returned to the cart to enable charging and managing functionality. Power and Ethernet cables are neatly managed. Weight capacity for bottom surface of notebook compartment is 20 lbs per row of notebooks (20 lbs each side and 20 lbs

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	compartment is 20 lbs per row of notebooks (20 lbs each side for total of 40 lbs max)	compartment is 20 lbs per row of notebooks (20 lbs each side for total of 40 lbs max)	notebook compartment is 20 lbs per row of notebooks (20 lbs each side and 20 lbs in center for total of 60 lbs max)	in center for total of 60 lbs max)
Notebook Bay Dimensions (W x D x H)	12.4 x 17.13 x 2.4 in (31.5 x 43.5 x 6 cm) To increase the height of a bay, adjacent shelves may be removed.			
Power Adapter Cradle Dimensions (L x W x H)	6.7 x 2.6 x 1.5 in (17 x 6.6 x 3.81 cm)			
Adapter Cradle Weight Capacity	.9 lbs (.4 kg)			
Service Compartments	Two locking, removable rear panels allow access to the AC adapters. Top locking panel located at the top surface of the cart is removable for access to the controller box. Not wired for switch or WAP/router.	Two locking, removable rear panels allow access to the AC adapters and Ethernet cabling. Top locking panel located at the top surface of the cart is removable for access to IT equipment (WAP/router, Ethernet switch(es) and controller box).Switch(es) and WAP/router are purchased separately and customer installed.	Two locking, removable rear panels allow access to the AC adapters. Top locking panel located at the top surface of the cart is removable for access to the controller box. Not wired for switch or WAP/router.	Two locking, removable rear panels allow access to the AC adapters and Ethernet cabling. Top locking panel located at the top surface of the cart is removable for access to IT equipment (WAP/router, Ethernet switch(es) and controller box). Switch(es) and WAP/router are purchased separately and customer installed.
Ergonomic Handles	Integrated ergonomic handles allow the cart to be pushed from either end (factory installed). Handle Material: ABS Handle Texture: MT11030 Handle Finish: Molded, HP Black			
Custom Docks	N/A			
Docking User Force	N/A			
Notebook Shelves	Lightweight glass-filled ABS shelves. Shelves feature hand cut-outs for easy notebook removal and venting for optimal cooling/airflow. Removable shelves and pegs allow extra storage space inside the cart. Shelf insertion/removal is a simple process entailing a peg and notch system. Notebook			

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	shelves are weight rated to support 10 lbs each.			
Ventilation	Venting is located on both end panels and the front and rear of the cart.	Four fans cool the notebooks in the main body of the cart. All fans are always on. Venting is located on both end panels and the front and rear of the cart	Venting is located on both end panels and the front and rear of the car.	Four fans cool the notebooks in the main body of the cart. All fans are always on. Venting is located on both end panels and the front and rear of the cart.
Casters	Four 4” medical-grade, dual-wheel custom casters support easy turning and moving over thresholds. All four casters can be locked into place via foot brake pedal to prevent cart from rolling. All four casters are swivel.			
Cable Management	Internal: Cable management clips on one side of the notebook bays keep power cables neat and managed inside the cart. External: Specially-designed panels located at each end of the cart provide venting and serve as a recessed cable management wrap for external cabling	Internal: Cable management clips keep power and Ethernet cables neat and managed inside the cart External: Specially-designed panels located at each end of the cart provide venting and serve as a recessed cable management wrap for external cabling.	Internal: Cable management clips on one side of the notebook bays keep power cables neat and managed inside the cart. External: Specially-designed panels located at each end of the cart provide venting and serve as a recessed cable management wrap for external cabling	Internal: Cable management clips keep power and Ethernet cables neat and managed inside the cart External: Specially-designed panels located at each end of the cart provide venting and serve as a recessed cable management wrap for external cabling.
Security Feature	Includes a standard key/ lock system for securing the notebook and the service compartments. A single key opens all notebook and service compartments of the cart. All compartments are independently secured, restricting user access to only desired compartments. Four keys are included with each cart. **NOTE:** All carts are keyed the same			
Theft Deterrence	Handles may be used to tether the cart to a secure anchor. Pull force to be determined during product testing.			
Slip resistant top mat with ESD	Not included			
Tip Test/Angle	Product is designed to meet tip angle of 10 degrees			
Storage and Modularity of Notebook Bay	Removable shelves allow extra storage space inside the cart. To increase the height of a notebook bay, simply remove an adjacent shelf.			
Plastic Composition & Texture	Plastic Composition: • HB-ABS, Samsung Cheil Industries SD-0150 or LG Chemical, HF380 • Color – HP Black (6009-0337) Texture:			

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	• Major plastics - MT11020 • MT11030 (Handles) • Polish surfaces SPI finish A1			
Product Finish (Resin & Paint Colors & Any Visible Metal Surfaces)	Black Metal Surfaces: • Paint - HP Black			
Operating Assumptions	Custom power controller design - capable of operating within the standard electrical requirements of the country of purchase.			
AC Power Adapter	AC adapters for powering notebooks are customer supplied and installed.			
Liquid Ingress Protection Requirement	Grade “0” Cart structurally engineered to preclude liquids but not warranted to be “liquid-proof” with doors closed.			
Altitude	2,000m maximum			
Internal User Power Outlets (Country Specific)	Internal power strips are rated to 8.5 amps each, 5 devices per power strip (100-120V carts) and 4 amps each, 5 devices per power strip (220-240V carts).			
	• 20 for notebook AC adapters Intelligent electrical system senses power needs and allocates power as needed throughout the cart. Notebook outlets are cycled on based on power budget and charge priority.	• 20 for notebook AC adapters • 1 WAP (always on) • 1 for Ethernet switch • 2 not used (120V version) • 1 not used (230V version) Intelligent electrical system senses power needs and allocates power as needed throughout the cart. Notebook outlets are cycled on based on power budget and charge priority	• 30 for notebook AC adapters Intelligent electrical system senses power needs and allocates power as needed throughout the cart. Notebook outlets are cycled on based on power budget and charge priority.	•30 for notebook AC adapters • 1 WAP (always on) • 2 for Ethernet switches • 1 not used for 120V version Intelligent electrical system senses power needs and allocates power as needed throughout the cart. Notebook outlets are cycled on based on power budget and charge priority.
External User Auxiliary Outlets (Country Specific)	Includes 2 external auxiliary outlets with power priority. If there is available current while the Aux outlets are in use it will be directed to charging the notebooks. Once external equipment is unplugged or turned off, full charging and managing activity resumes. External outlets are always on. Intelligent electrical system dedicates power to the external outlets when equipment is plugged in and turned on (1st priority).			
Power priority	External auxiliary outlets, then charging activity	External auxiliary outlets, then charging and managing activity	External auxiliary outlets, then charging activity	External auxiliary outlets, then charging and managing activity
Controller	Power allocation happens upon plugging in the cart and possibly upon the introduction of a new factor (such as plugging in an additional notebook, use of the external auxiliary outlets, etc). Power			

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	is applied to all notebooks and the total current is monitored. The sequence is: Try all on and if too much wall current, divide the number of banks receiving power -in-half one or more times. The combined groups of banks are charged for approx. 18-minutes total, then try all on again following the sequence. Repeat until all can be on. Once all the banks can be charged together, charging is continuous.			
Fast Response Inrush Current Limit	Inrush current limiting is provided with a patent-pending method using digital control			
LED Status Indicators	Five LED lights with corresponding icons are located on the top work surface for easy read out. Indicators show the following power information: Power Indicator • White solid – power • White flashing - over-current limit Internal outlets: • White Solid - Bank (1-4) is charging		Seven LED lights with corresponding icons are located on the top work surface for easy read out. Indicators show the following power information: Power Indicator • White solid – power • White flashing - over-current limit Internal outlets: • White Solid - Bank (1-6) is charging	
Notebook Charging Status	Cart design assumes that charge status of each individual notebook will be displayed on the notebook and not indicated on the cart.			
Fault Conditions	None			
Controller Box	The Controller Box accepts power from an input cord and is distributed through two circuit breakers (Line and Neutral) to the Power Control Board. The control board provides digital signals to the LEDs. It is designed to meet all applicable standards. The controller box houses the PC board that directs the intelligent electrical system.	The Controller Box accepts power from an input cord and is distributed through two circuit breakers (Line and Neutral) to the Power Control Board. The control board provides DC power to four fans and digital signals to the LEDs. It is designed to meet all applicable standards. The controller box houses the PC board that directs the intelligent electrical system.	The Controller Box accepts power from an input cord and is distributed through two circuit breakers (Line and Neutral) to the Power Control Board. The control board provides digital signals to the LEDs. It is designed to meet all applicable standards. The controller box houses the PC board that directs the intelligent electrical system.	The Controller Box accepts power from an input cord and is distributed through two circuit breakers (Line and Neutral) to the Power Control Board. The control board provides DC power to four fans and digital signals to the LEDs. It is designed to meet all applicable standards. The controller box houses the PC board that directs the intelligent electrical system.
Cooling	No fans	Four 12-volt DC continuous operation cooling fans are included	No fans	Four 12-volt DC continuous operation cooling fans are included
RJ-45 Interconnect Cables	Not included	Included	Not included	Included

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Ethernet Switch	Switch and mounting brackets are not included, cart is not upgradeable	Switch not included, cart may be upgraded by customer if desired. Ethernet switch 1U mounting brackets and dedicated space for one Ethernet switch is provided within the secured upper compartment of the cart. Cart electrical system power budget and outlet layout is designed for use of one Ethernet switch for managing the notebooks/ support of Wake on LAN functionality assumed.	Switch and mounting brackets are not included, cart is not upgradeable	Switch not included, cart may be upgraded by customer if desired. Ethernet switch 1U mounting brackets and dedicated space for one Ethernet switch is provided within the secured upper compartment of the cart. Cart electrical system power budget and outlet layout is designed for use of one Ethernet switch for managing the notebooks/ support of Wake on LAN functionality assumed.
External RJ-45 Cable (from switch to the wall)	Not included	10' cable is included	Not included	10' cable is included
WAP (Wireless Access Point) or Wireless Router	WAP/router is not included, cart is not upgradeable	WAP/router not included, cart may be upgraded by customer if desired. Cart electrical system power budget and outlet layout assumes the use of a 15-Watt max WAP or wireless router. The WAP/wireless router receptacle is always on.	WAP/router is not included, cart is not upgradeable	WAP/router not included, cart may be upgraded by customer if desired. Cart electrical system power budget and outlet layout assumes the use of a 15-Watt max WAP or wireless router. The WAP/wireless router receptacle is always on.
Country-Specific Power Distribution	Provide power for:• 20 AC-DC Adapters for each notebook via four, five-outlet country-specific power strips.• Two external auxiliary country-specific outlets	Provide power for:• 20 AC-DC Adapters for each notebook via four, five-outlet country-specific power strips.• Combined power distribution for one country-specific Ethernet switch and one country-specific WAP/router• Two external auxiliary country-specific outlets	Provide power for:• 30 AC-DC Adapters for each notebook via six five-outlet country-specific power strips.• Two external auxiliary country	Provide power for:• 30 AC-DC Adapters for each notebook via six five-outlet country-specific power strips.• Combined power distribution for two country-specific Ethernet switches and one country-specific WAP/router• Two external auxiliary country-specific outlets

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DC Power Dongles	Not Required - Cart will use customer-supplied power adapters to supply charge to the notebook. Customer will install each power adapter using adapter storage cradle and securing strap for cable management.			
Power Cord to Cart (from cart to the wall)	8’ detachable country-specific straight cord			
External Power Switch	The cart disconnect is the power cord - no on/off switch is provided (unplug main AC power cord to disconnect power)			
Product Storage and Transportation Temperature	-40 degrees C to +60 degrees C Relative Humidity – Storage 5-95% (non condensing)			
Operating Temperature	0 degrees C to 30 degrees (Relative Humidity – Operating 10-90% (non condensing)			
Acoustics	Following ISO 7779 & ISO 9296, when operating with doors closed			
Overall Cart and Electrical Certifications Assumed	RoHS REACHT The system must be Listed, Verified, and Certified to: • UL 60950-1 • CAN/CSA C22.2 No. 60950 • UL 1678 • ICES-003 Issue 5, Class A • FCC Part 15 Class A • And others as required			
Packaged Weight	219.6 lbs (99.61 Kg)	227.3 lbs (103.1 Kg)	261.25 lbs (118.5 Kg)	275.1 lbs (124.78 Kg)
Cart Weight (w/o computer equipment)	162 lbs (73.5 Kg)	172.3 lbs (78.15 Kg)	199.1 lbs (90.3 Kg)	202 lbs (91.618 Kg)
Rated Weight Capacity of Top Work Surface	25 lbs (11.3 kg)			
Overall Product Dimensions (L x W x H)	35.25” x 24.8” x 42.0” (89.5 x 63 x 106 cm)		48.65” x 24.8” x 42.0” (123.5 x 63 x 106 cm)	
Overall Packaged Product Dimensions with Pallet (L x W x H)	41.3” x 28.7” x 50.4" (105 * 73 * 128 cm)		53.5” x 28.7” x 50.4” (136 x 73 x 128 cm)	

Summary of Changes

Date of change:	Version 1 to 2		Description of change:
March 10, 2016	V11 to V12	Added	New carts HP 20 Charging Cart V2 T9E84AA HP 20 Mgd Charging Cart V2 T9E83AA HP 30 Charging Cart V2 T9E86AA HP 30 Mgd Charging Cart V2 T9E85AA
		Removed	Old carts
May 4, 2016	V12 to v13	Removed Changed Added	References to fans in all carts Verbiage for guiding clips Power rating for country specific outlets