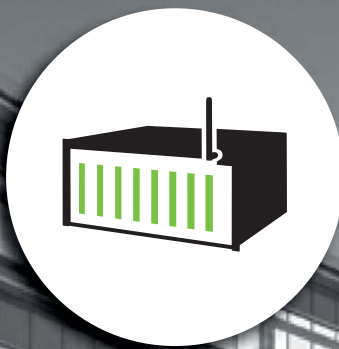# PACE

## 2017 PRODUCT CATALOG

## Video, Data & Content

Leading, Simplifying & Supporting

# ABOUT PACE

## History

Pace International was incorporated in 1972 by its founder Jim Deutsch. Headquartered in Rochester, MN, Pace catered to an independent base of TV and appliance retailers selling consumer electronics, repair parts, commercial audio and video, and TV reception equipment. Since then, the company has grown substantially from a regional distributor serving the upper Midwest to a national wholesaler servicing customers in all 50 states and Canada. Jim's son Patrick, who started with the firm in 1977, is now the CEO of the company and is carrying on the legacy of dedicated customer service, along with both of his sons.

Since 2008, Pace has been the DISH national authorized commercial distributor for hardware and content. We offer solutions to PCO's, Integrators, ISP's, WISP's, CLEC's and ILEC's, helping them provide voice, video, and data anywhere in their communities.

With unmatched value-added services, our team invites you to experience what differentiates Pace from the rest of the competition.

## Mission Statement

Leading, simplifying and supporting the integration of hardware and content solutions within a complex communications marketplace.

**44+ years**

*Pace is Celebrating 44+ Years of Service!*

1972          2017

# CONTENTS

| Category | Products | Brands |
|---|---|---|
| **Audio/Video** | Amplifiers, Commercial Audio, HDMI, IR Controls, Mixers, Network Audio, Patch and Pre-Made Cables, Speaker Wire, Speakers, and TV Mounts | Dynex, Insignia, MVP, Peerless, Platinum Tools, Rocketfish, Sanus, TOA, Tradewind, and Xantech |
| **Data** | Wireless Access Points, Gateways, Controllers, Antennas, Modems, PoE Injectors, Network Switches, SFPs, Routers, and CMTS | Ruckus Wireless, Pico, Alcatel-Lucent, Aruba, Mimosa, Harmonic, ICC, EnGenius, D-Link, and MikroTik |
| **Bounding and Grounding** | Connectors, Ground Blocks, Ground Straps and Clamps, Lag Bolts, Pipe Clamps, Split Bolts, and Wire | Allied Bolt, Belden, EZ Fabrication, King Controls, Pace, and Tradewind |
| **DISH** | Accessories, DISH Approved Products, Hard Drives, LNBs, Messenger Cables, Mounting Accessories, Receivers, Remotes, RV/Mobile Satellite Antennas, Sling Adapters, Smartbox, and Taps | DISH, King Controls, and Winegard |
| **Fiber Optic Products** | Amplifiers, Attenuators, Chassis, Cleaning Kits, Fiber Demarcation Boxes, Fiber Optic Jumpers, Inspection Equipment, Patch Cords, Pigtail Jumpers, Splice Trays and Blocks, Splicing, Splitters, Test Equipment, Tools, and Transmitters | AFL, Fiberdyne, Olson Technology, PCT, and Televes |
| **HDMI** | Connectors, Ground Blocks, Ground Straps and Clamps, Lag Bolts, Pipe Clamps, Split Bolts, and Wire | Etekcity, Pace, Tradewind, and Vanco |
| **QAM** | Accessories, DISH Approved Products, Hard Drives, LNBs, Messenger Cables, Mounting Accessories, Receivers, Remotes, RV/Mobile Satellite Antennas, Sling Adapters, Smartbox, and Taps | Televes, ZeeVee, and Others |
| **Satellite and Terrestrial** | Accessories, DISH Approved Products, Hard Drives, LNBs, Messenger Cables, Mounting Accessories, Receivers, Remotes, RV/Mobile Satellite Antennas, Sling Adapters, Smartbox, and Taps | Chief Manufacturing, DISH, Pico, Sonora, Steren, Televes, Tradewind, and Winegard |

| Category | Products | Brands |
|---|---|---|
| **Signal Distribution** | Jumpers, Line and Phone Cords, Speaker Wire, Splice Trays, Splitters, and Wire | AFL, Allied Wire, EZ Fabricating, Steren, and Tradewind |
| **SMATV Headend Equipment** | Combiners, Digital/QAM Modulators, Fan Racks, Headend Controller, Mini and Full-Sized Modulators and Demodulators, Power Strips, Power Supplies, Processors, Rack Plates, Racks and Cabinets, Sliding and Rotating Racks, and Wall Mountable Racks | EZ Fabrication, MVP, PICO, Televes, Tradewind, EnGenius, D-Link, Casa Systems, ICC, and ZeeVee |
| **Tools** | Batteries, Battery Chargers, Bits, Blades, Bolts, Carrying Cases, Cleaning Supplies, Crimp Tools, Cutting Tools, Drills, Dry Wall Supplies, Electrical Tape, Extension Cords, Fasteners, Flashlights, Hacksaws, Hammers, Hand Trucks, Hex Keys, Ladders, Levels, Mallets, Nut Drivers, Pliers, Power Strips, Safety Supplies, Sanders, Screwdrivers, Screws, Socket Extensions, Soldering Tools, Stud Finders, Tape Measures, Test Lead Kits, Testers, Tool Belts, Vacuums, Vise Grips, Washers, Work Gloves, and Wrenches | ACE, Allied Bolt, Black & Decker, Bosch, DeWalt, Fluke, Hilti, Hitachi, Irwin, Ivy Classic, Klear Screen, Klein Tools, Louisville, Milwaukee, Phillips, Shop Vac, Stanley Techspray, Tradewind, and Triplett |
| **Wire and Cable** | Cable and Category Jumpers, HDMI Cables, RCA Cables, RG6 Coax, and Speaker Wire | Belden, CommScope, MVP, Pace, Tradewind, and Vanco |
| **Wire Management** | Adapters, BNC Connectors, Cable Caddies, Cable Splice, Compression Tools, Connector Rings, Connectors, Couplers, Extenders, F-Connectors, Hex Connectors, Jacks, RG59/RG6 Connectors, Nail Clips, Plugs, Punch Down Tools, Raceway Parts, Replacement Stripper Blades, Snap-N-Seal Connectors, Speaker Wire, Staple Guns, Strippers, Terminators, and UR Scotchlocks | 3M, B.E.S., ICM, Pace, Platinum Tools, Steren, Thomas & Betts, Tradewind, and Wire Trak |

# THE PACE DIFFERENCE

Pace is a value added distribution company servicing multiple industries including telecom, low voltage, OEM and national retail since 1972. We are privately held with a second generation owner and third generation employees on staff. Pace headquarters are proudly based in Rochester, MN U.S.A. Our mission is to lead, simplify and support our customers every day. What sets Pace apart from other distributors in market today? Our customers and the value added services we provide them.

- Over 45 years of expertise and stability as a value added distributor.

- All the products you need in one place: data, video, hand and power tools, safety, fiber optics, audio, electrical and much more!

- Pace employs solution seekers and creative thinkers. We always look for unique solutions we can custom manufacture for our customers' needs.

- Pace offers purchasing terms to qualified applicants and even leasing options through POET Capital L.L.C for the larger jobs.

- For orders placed before 3pm CST, Pace has same day shipping.

- Call center support is available to handle after hours customer calls and technical support.

- We understand B2B and B2C as we have deployed video and data products both residentially and into the largest of National Accounts in the retail space.

- If you have a data solution, Pace can help with a video offering. Vice versa, if you have a video solution, Pace can help with a data offering! The solution includes both hardware and content.

- Pace will build, balance and burn your data or video deployments. Not only will we design your system, but we can test before deployment to ensure your product is working at peak performance.

- Pace can be a one stop shop for your next project. Even if we do not have the product, we can source it, bring it in house, kit it with our products and ship to one single location. No more multiple points of contact, multiple PO's to be cut or multiple shipments from all over the country!

- As the experts, we have a tenured staff and, specifically, engineers on staff to answer your questions and make your business successful.

# BRANDS WE CARRY

## POET Capital, LLC

## Commercial Leasing

We understand your business and can offer simplified leasing plans. Let us help you win business and offer your customers incremental payments for equipment and labor.

- Financing for labor and equipment
- Preserve your credit lines
- Tax write-off benefits
- Minimize cash outlay
- 10 minute application
- 24 hour turnaround
- Funding available for projects of all sizes

## Experienced Sales Staff

Pace and POET Capital, LLC have assembled a team to help you win business now and keep cash in your account. Let us help you get your next project off the ground with the financing you need.

Pace International, an authorized hardware and content distributor for DISH Network®, is your source for comprehensive commercial and multi-family solutions. From system design to deployment and technical support, the DISH Network® experts at Pace can help.
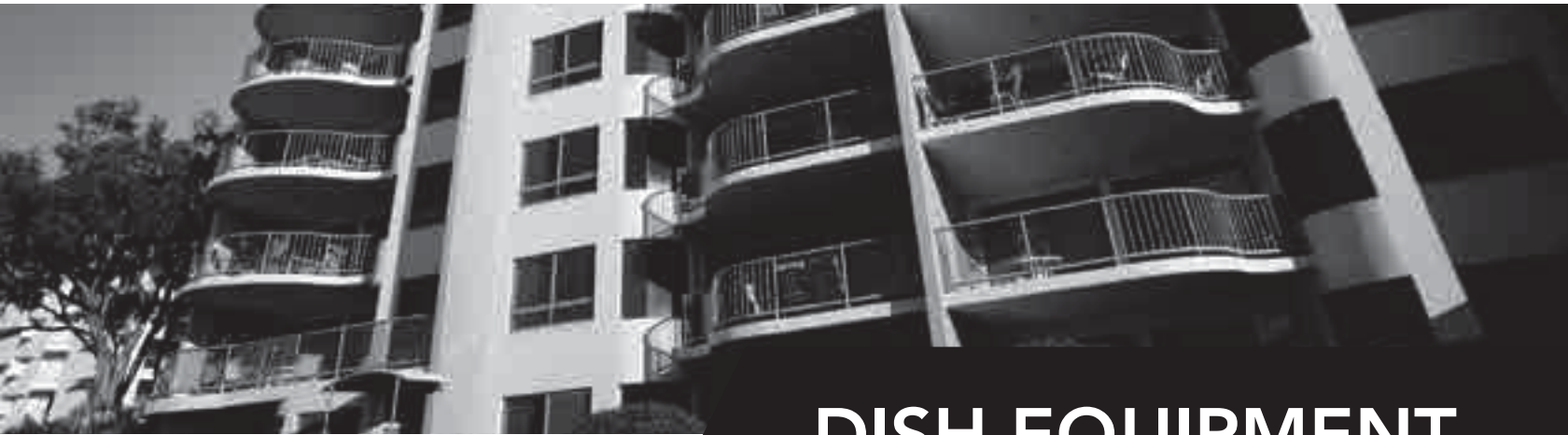
# DISH EQUIPMENT

dish
AUTHORIZED DISTRIBUTOR

# pure
# genius

8 ¾"
15 ⅞"
17 ¾"

The **smart**box from DISH is a revolutionary new video platform for the FTG market. **smart**box is the single solution for your entire property portfolio, delivering energy efficiency, flexibility, redundancy and requiring less space.

# smart
# innovation

- Deliver HD at the lowest cost per channel. All guests can now experience HD where they once had to be satisfied with watching SD analog.

- Bring the best possible experience to every TV on your property from a single device. For example, HD for the guest rooms and public-viewing areas and analog for the treadmill.

- Allows accommodation in existing equipment rooms with a physically small size of 5RU. The chassis can be wall-mounted or rack-mounted, depending on your needs.

- More than 40 possible system configurations can be created using a single **smart**box.

- Monitoring power, system health and configuration are implemented with the integrated wireless modem. Remote management is also fulfilled with the same integrated wireless modem.

- Quick and efficient installations through the integration of all input and output signal processing normally associated with FTG video platforms.

- 40 channels of HD digital FTG TV require fewer than 300 watts of power. That is up to 90% less power consumption than current systems. The low power consumption combined with an operating temperature range of up to 122°F alleviates the need to upgrade cooling systems.

621000050
1.0 Meter Dish

# **smart**box™
## connection diagram

DN005050
Power Inserter

PVGLS Single
Ground Lug
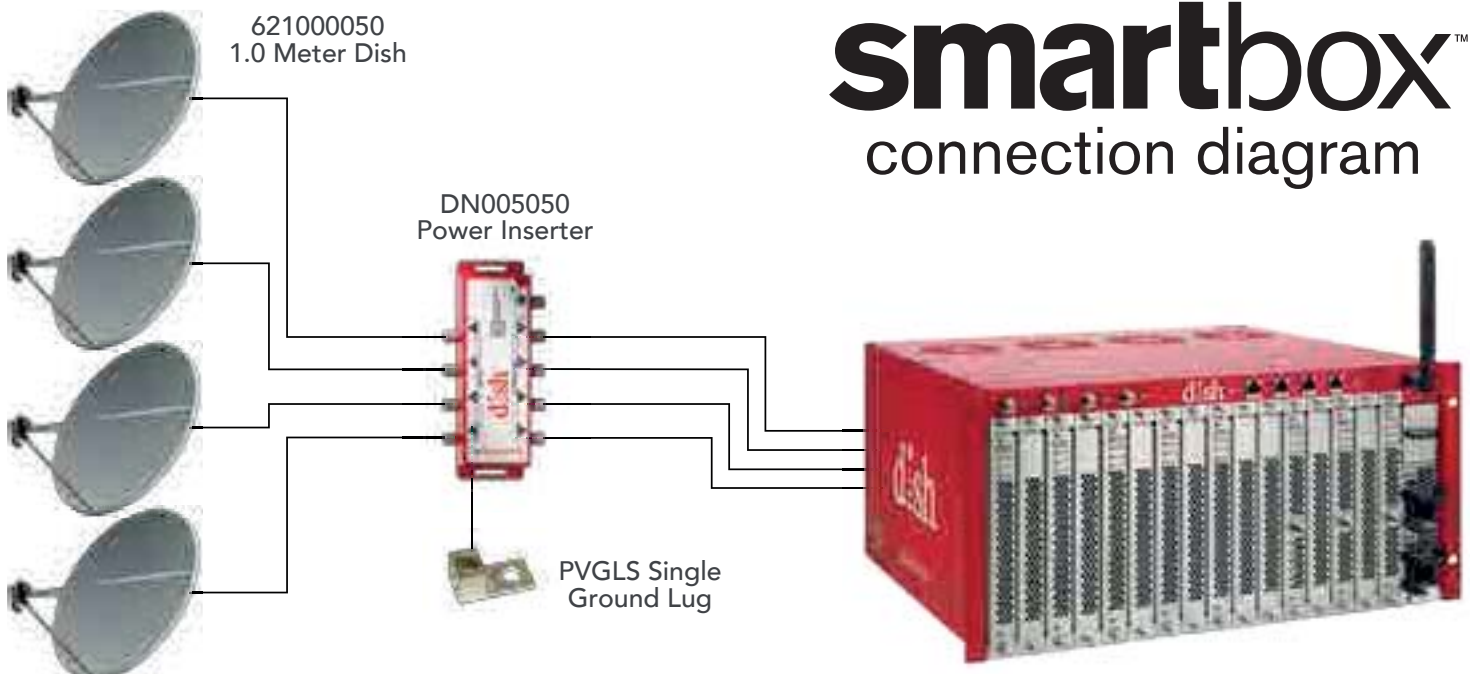
# THE SMART LIST
## Installers you can trust.

## CONNECTING OPERATORS WITH SMART CERTIFIED INSTALLERS

The Smart List connects operators to certified installers with one simple search. Find certified installers in DISH® commercial systems including DISH Set-Top Boxes, DISH Optical Network (DON), **smart**box, QAM and L-Band. This exclusive list of trusted installers requires an application for approval to be listed as an installer or to have access to search. Get Smart and Get Connected by applying now!

### WHY JOIN THE SMART LIST?

#### INSTALLER BENEFITS

- Generate new business relationships
- Get trained on installing products such as **smart**box, QAM, and L-Band
- Additional revenue

#### OPERATOR BENEFITS

- Access to a nationwide footprint of installers
- DISH installers, supported by Pace
- Diverse knowledge and know-how of complex DISH commercial installations

## smartbox
## technician toolkit

Pace International is DISH's **smart**box certification partner. We not only facilitate **smart**box certification training but offer the tools necessary for your technicians to successfully and efficiently complete the installation of the **smart**box.

# smartbox™ technical specs

## Chassis Assembly - DN005655

### Mechanical and Environmental

| | |
|---|---|
| Dimensions (H x W x D) | 8.7″ x 17.6″ x 15.8″ (compatible with 19" EIA rack) |
| Weight | 17.0 lbs. Includes 2 power supplies, 1 power supply cover, no filler plates, no blades |
| Line Voltage | 90–264 VAC, 47–64 Hz |
| Power Consumption | MAX 1200W |
| Operating Temperature | 0–50°C (32–122°F), non-condensing |

### Blade Options

| | |
|---|---|
| Satellite Receiver Blade | 1 to 12 Blades |
| ATSC Receiver Blade | 0 to 3 Blades |
| QAM 16 Blade | 0 to 3 Blades |
| QAM 48 Blade | 0 to 2 Blades |
| QAM 96 Blade | 0 to 2 Blades |
| NTSC Analog Blade | 0 to 3 Blades |

### Satellite Inputs (from LNB)

| | |
|---|---|
| Number of Inputs | 4, labeled Sat 1 thru Sat 4 |
| Connector | F, female |
| Impedance | 75 ohms |
| Input Frequency | L-Band, 950 – 2150 MHz |
| Input Power | -25 to -65 dBm, aggregate |
| Return Loss | > 15dB |

### Satellite Input LED Indicators

| | |
|---|---|
| Number of LEDs | 4, associated with each of 4 satellite inputs |
| Green | Signal power is detected on LNB |
| Amber | High signal on LNB |
| Red | Low or no signal detected |

### Network Interfaces

| | |
|---|---|
| Number of Inputs | 4, labeled Data 1 through Data 4 |
| Connections | RJ-45, GbE, Full Duplex, Auto-Negotiate |
| Addressing | Multicast |
| Transport Protocol | UDP/IP |
| Transport Format | SPTS |
| IP Management | HTTP, TR-069 |
| Local User Interface | Web Browser |

## Satellite 8ch Receiver Blade - DN007429

| | |
|---|---|
| Dimensions (H x W x D) | 7.5" x 0.9" x 14.5" |
| Power Consumption | 30W (Typical) |
| Satellite Channels | 8 transponders and/or 8 programs |

### Modulation Rates

| | |
|---|---|
| DVB-S: | Symbol Rates 1 to 45 MSps Interleave 1/2, 2/3, 3/4, 5/6, 7/8 |
| DVB-S2: | Symbol Rates 5 to 33 MSps QPSK Interleave 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9,10 8PSK Interleave 3/5, 2/3, 3/4, 5/6, 8/9, 9/10 |
| Turbo FEC: | Symbol Rates 2 to 30 MSps QPSK Interleave 1/2, 2/3, 3/4, 5/6, 7/8 8PSK Interleave 2/3, 3/4, 4/5, 5/6, 8/9 |
| Acquisition Range | ± 5 MHz |

## Satellite Receiver Blade with Transcoder Module - DN006571

| | |
|---|---|
| Dimensions (H x W x D) | 7.5″ x 0.9″ x 14.5″ |
| Power Consumption | 60W (Typical) |
| Satellite Channels | 8 transponders and/or 8 programs |

### Modulation Rates

| | |
|---|---|
| DVB-S: | Symbol Rates 1 to 45 MSps Interleave 1/2, 2/3, 3/4, 5/6, 7/8 |
| DVB-S2: | Symbol Rates 5 to 33 MSps QPSK Interleave 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 8PSK Interleave 3/5, 2/3, 3/4, 5/6, 8/9, 9/10 |
| Turbo FEC: | Symbol Rates 2 to 30 MSps QPSK Interleave 1/2, 2/3, 3/4, 5/6, 7/8 8PSK Interleave 2/3, 3/4, 4/5, 5/6, 8/9 |
| Acquisition Range | ± 5 MHz |
| Conversions Supported | MPEG-4 (Native) to MPEG-2 either HD or SD with no format conversion |

## ATSC Receiver Blade - DN003393

| | |
|---|---|
| Dimensions (H x W x D) | 7.5″ x 0.9″ x 13.5″ |
| Power Consumption | 20W (Typical) |
| Connector | F-Female |
| ATSC Channels | 8 carriers and/or 8 programs |
| Frequency Range | 42–1002 MHz |
| Input Level per Carrier | -35 to +44 dBmV |
| Return Loss | >15 dB |
| Impedance | 75 ohms |
| Optional Modules | Transcoder |

## QAM 16 Blade - DN003390

| | |
|---|---|
| Dimensions (H x W x D) | 7.5″ x 0.9″ x 13.5″ |
| Power Consumption | 25W (typical) |
| Connector | F-Female |
| Output Frequency | 54–1002 MHz |
| Channel Bandwidth | 16 channels, 6 MHz per channel |
| Modulation | ITU-T J.83B Annex B (256QAM) |
| QAM Symbol Rate | 5.360537 MSps |
| Interleaving | 128/1 Annex B |
| Channel Plans | EIA, HRC, IRC, Manual |
| Output Frequency Accuracy | 125 Hz |
| Output Level | 45 dBmV effective precombined output power |
| Output Attenuation | 0 to 10 dB (0.5 dB step) |
| Output Level Flatness | (54 to 864 MHz) ±1 dB (864 to 1002 MHz) ±2 dB |
| Spurious | > 60 dBc (in 4MHz) |
| Output Impedance | 75 ohms |
| Output Return Loss | >11 dB |

## QAM 48 Blade - DN003391

| | |
|---|---|
| Dimensions (H x W x D) | 7.5″ x 0.9″ x 13.5″ |
| Power Consumption | 50W (typical) |
| Connector | F-Female |
| Output Frequency | 54 to 1002 MHz |
| Channel Bandwidth | 48 channels, 6 MHz per channel |
| Modulation | ITU-T J.83B Annex B (256QAM) |
| QAM Symbol Rate | 5.360537 MSps |
| Interleaving | 128/1 Annex B |
| Channel Plans | EIA, HRC, IRC, Manual |
| Output Frequency Accuracy | 125 Hz |
| Output Level | 45 dBmV effective precombined output power |
| Output Attenuation | 0 to 10 dB (0.5 dB step) |
| Output Level Flatness | (54 to 864 MHz) ±1 dB (864 to 1002 MHz) ±2 dB |
| Spurious | > 60 dBc (in 4MHz) |
| Output Impedance | 75 ohms |
| Output Return Loss | >11 dB |

## QAM 96 Blade - DN003392

| | |
|---|---|
| Dimensions (H x W x D) | 7.5″ x 0.9″ x 13.5″ |
| Power Consumption | 40W (typical) |
| Connector | F-Female |
| Output Frequency | 54 to 1002 MHz, 768 MHz channel range maximum |
| Channel Bandwidth | 3.83, 5.48, 5.56, 5.67, 5.75, 6.43, 7.47 |
| Modulation | ITU-T J.83B Annex A (64, 128, 256 QAM) |
| QAM Symbol Rate | 3.33, 4.76, 4.84, 4.93, 5.00, 5.59, 6.50 MSps |
| Interleaving | 128/1 Annex B |
| Channel Plans | EIA, HRC, IRC, Manual |
| Output Frequency Accuracy | 125 Hz |
| Output Level | 45 dBmV effective precombined output power |
| Output Attenuation | 0 to 10 dB (0.5 dB step) |
| Output Level Flatness | (54 to 864 MHz) ±1 dB (864 to 1002 MHz) ±2 dB |
| Spurious | > 60 dBc (in 4MHz) |
| Output Impedance | 75 ohms |
| Output Return Loss | >11 dB |

## NTSC 24 Blade - DN003397

| | |
|---|---|
| Dimensions (H x W x D) | 7.5″ x 0.9″ x 13.5″ |
| Power Consumption | 50W (typical) |
| Connector | F-Female |
| Maximum Number of NTSC Channels | 24 NTSC RF with mono audio |
| Frequency Range | 120 to 552 MHz |
| Band Plan | STD, IRC |
| Output Level 24 NTSC Channels | 45 dBmV (min per channel) |
| Output Adjust Range | 10 dB |
| Attenuation Steps Increment | 0.5 dB |
| Output Impedance | 75 ohms |
| Output Return Loss In-Band | -11 dB 120 to 552 MHz |
| RF Flatness Response | ±1 dB 120 to 552 MHz |
| Carrier Frequency Stability | 5 kHz Std channel |
| Audio/Video Carrier Ratio | 15 ±2 dB |

## DISH 16-slot Chassis
DN005655

- Each chassis can hold up to 16 blades.
- The chassis comes equipped with 2 hot swappable power supplies, a power supply filler plate, and a cellular modem for communication back to DISH.



## DISH 16-Channel QAM blades
DN003390

## DISH 48-Channel QAM blades
DN003391

## DISH 96-Channel QAM blades
DN003392

- Each QAM blade outputs digital audio/video signals for distribution via standard CATV (5-1000 MHz) coax infrastructure.



## DISH 8-Channel ATSC Receiver Blade
DN003393

- Each ATSC receiver blade provides up to eight programs over-the-air (OTA ) TV service.



## DISH 4 port Power Inserter w/ Surge Protection
DN005050

- Four port, high capacity power inserter with surge protection.



## DISH 24-Channel Analog NTSC TV Blade
DN003397

- Provides up to 24 channels of NTSC modulated services.



## DISH Single Blade Filler Plate
DN003399

- All slots need to contain either a blade or a filler plate for the smartbox to function. This blade fulfills that need.



## DISH 8ch Satellite Receiver Blade With Transcoder
DN006571



## DISH 8ch Satellite Receiver Blade Without Transcoder
DN007429

Each satellite receiver blade provides eight channels of satellite TV service via eight discrete tuners. Each blade has two smart cards and two ProCams that authorized in the same manner as a residential DISH receiver.



## 36" Wall Mountable Rack with Hardware
MOR-36



## DISH Smartbox Power Supply
DN003398

- Each power supply is hot-swappable.
- Two power supplies are included with each chassis and are load balancing.
- An additional slot is available for additional redundancy or high-power smartbox installations.



## DISH Power Supply Filler Plate
DN003401



## DISH Power Supply Spare Fan Assembly
DN004176



## DISH Chassis Spare Fan Assembly
DN003402

## UPS/AVR Rack Mount
OR2200PFCRT2U

- 2000VA / 1320W Pure Sine Wave UPS
- Line-Interactive Topology
- AVR & GreenPower UPS™
- 2U Rack/Tower Convertible
- Multifunction Rotatable LCD Display
- 8 Outlets with USB, Serial and EPO Ports
- EMI/RFI Filters
- PowerPanel® Business Edition

## AVR Series
CP1200AVR

- 4" x 9.75" x 13.25"
- UPS topology - line interactive
- Energy saving GreenPower UPS™ Bypass Technology

## Coaxial Surge Protector
TSS-2400

## Single Ground Lug
PVGLS

## ZyCast DHDIP-9 HD IP Encoder
DHDIP-9
Allows the user to stream any one audio/video source over an IP Network up to any Smart HDTV's or connected computers within the IP Network.

## BrightSign XD232 Networked Player
XD232
Capable of dual Full HD 1080p60 video decoding and simultaneous content playback from local, networked and streaming sources. Includes PoE+ networking and content support with a fast graphics and HTML5 engine.

## BrightSign XD1030 Networked Interactive Player
XD1030
All the features of the XD230 plus S/PDIF output for pure digital and surround sound audio and a diverse range of interactive controls such as GPIO, serial, USB, UDP and mobile devices, for engaging interactive displays.

## BrightSign XD1230 Networked Interactive Player with Live HDTV
XD1230
Includes all the features BrightSign offers plus Live HDTV playback, so you can play content from any broadcast channel (even HDCP protected content) via the HDMI input and content from cable TV or closed circuit TV broadcasts via the ATSC/Clear QAM tuner.

## ESD Mat with 6' Ground Cord

| Part # | Size |
| --- | --- |
| BW021212 | 12" x 12" |
| BW0212084 | 16" x 24" |

## DigiNova Boss U/V Antenna w/PSU
144180

- 7 element Yagi UHF antenna (directional) with Microstrip1 technology and printed FM / High VHF dipole.
- BOSS-Tech technology automatically adjusts VHF and UHF gain to deliver optimum signal output levels at all times.
- The included indoor power supply activates the BOSS-Tech system built into the Diginova antenna. The antenna can also be used in passive mode.

## DAT-790 HD Boss U/V Antenna
149481
Incorporating state-of-the-art automatic gain control intelligent circuitry that automatically adjusts the response of the antenna to ensure optimum and balanced signal levels are always delivered at the output.

## Domestic 2-out Antenna PSU
550104

- 108-132 VAC 50/60 Hz to 12 VDC

## Adjustable Wrist Strap w/ 6' Coil Cord
B9608

- Anti-static adjustable wrist strap
- Used when working with computer or electronic equipment

## DISH Super Joey
203904

‣ Provides full Joey functionality with added benefit of having two additional tuners for WHDVR use.

‣ Broadband Internet access via Hopper Internet Connector or broadband connected Hopper receiver.

‣ View high-definition and standard definition programming.

## DISH Joey
187894

‣ Thin-client receiver that communicates with the Hopper, giving you full HD DVR functionality on each of your TVs.

‣ Each Joey has the same TV user interface as the Hopper.

‣ A single Hopper can be configured with up to 3 Joeys (4 TVs).

‣ A two-Hopper solution can be configured with up to 4 Joeys (maximum of 6 TVs).

## Wireless Access Point for Joey
200237

‣ Allows a Hopper DVR to communicate with a Wireless Joey

‣ Requires Hopper DVR and Wireless Joey from DISH

‣ Secure dedicated network does not use home Wi-Fi Networks

## DISH Wireless Joey
199924

‣ Gives you the ability to watch TV virtually anywhere in and around the home without pre-wiring or additional coax cabling.

‣ Full Hopper functionality and the ability to view, record, pause, rewind and fast forward TV content.

## DISH Hopper with Sling
197107

‣ Hub for the whole-home TV entertainment system, Hopper is a 2-terabyte HD DVR with 3 satellite tuners and provides full DVR functionality to the other TVs in the home through thin client receivers (Joey) making up the whole-home DVR network.

‣ Compatible with both eastern arc and western arc DISH 1000

‣ Has built in Sling adapter

‣ Hopper features a tile based user interface in HD, featuring super fast scrolling and a 3 hour window of future programming on a single screen with channel logos listed for easy visual reference

## DISH Hopper Internet Connector HPR200
190149

‣ Enables Internet connectivity throughout the Hopper Joey System through a single co-axial cable.

‣ May be used when the Hopper cannot be connected directly to Ethernet.

‣ The Hopper Internet Connector can be installed on any "Client" side of the coaxial cabling to provide connectivity to the entire Whole-Home DVR network.

‣ Internet Connector keeps critical receiver data current.

‣ Allows consumers to access thousands of online titles and order PPV using their remote control.

## DISH ViP® 722k Receiver
DISH-VIP722K

‣ Records up to 350 hours of SD and 55 hours of HD programming

‣ Supports two independent viewing TVs - a remote control for each TV. High-definition (HD) and standard definition (SD) on TV1; SD on TV2

‣ View HD and SD programming TV1 display resolutions: 480i, 480p, 720p, 1080i (1080p for applicable Video on Demand) TV2 display resolution is 480i

‣ Independently watch TV in two rooms, or watch one show while recording another in one room

‣ Dolby Digital audio

## DISH ViP® 222k Receiver
DISH-VIP222K

‣ Supports two independent TV's, with DVR, and a remote control for each TV

‣ HD and SD on TV1, and SD only on TV2

‣ 500GB hard drive

‣ TV Resolutions 480i, 480p, 720p, 1080i, (1080p for applicable On-Demand)

## DISH ViP® 211k Receiver
DISH-VIP211K

‣ HDMI, S-video, RCA, component, and RF outputs

‣ M-Peg 4 satellite receiver

## DISH Wally Receiver
208381

‣ New user interface

‣ Access to a variety of apps

‣ Compact and sleek design

‣ M-Peg 4 satellite receiver

## DISH 32.0 Remote
165541

Only compatible with the SlingLoaded 922 Receiver

## DISH 40.0 UHF Hopper/Joey Remote
190482

▸ Only works for Hopper and Joey
▸ Can operate the Hopper by UHF signal

## Dual Over-The-Air Tuner
194858

The Dual Over-the-air digital adaptor for the DISH Wally® satellite receiver. The DISH Over-the-Air (OTA) Module allows you to add a digital over-the-air tuner to your Wally® satellite receiver. This module/tuner provides the ability to integrate over-the-air channels into the on-screen Program Guide for seamless viewing.

## EZR-DVR Remote One Tuner DVR
196815

Compatible with models 322, 512, 522, 625, 622, 722 and 922

## DISH Wally Remote
DN006801

▸ The remote is RF (radio frequency) and    can be used up to 200ft from the receiver    without direct line of sight
▸ Universal features that allow you to control your TV, Satellite, Auxiliary and Input
▸ Sync up to four remotes to one receiver
▸ Locate your missing remote with Remote Finder on the Wally Receiver

## 3.2 IR Remote Control
DISH-137207

Compatible with the following receivers: 3900, 3000, 301 and 311

## Wi-Fi Adapter
WIFI-ADPT

▸ Wirelessly connect to your favorite apps
▸ Designed to be used with the DISH Wally Receiver
▸ Space-saving cradle mount included
▸ Simple USB plug-in connection

## DISH QAM Adapter
210163

Integrator is used to connect Super Joey to a DPP LNBF or switch and a port on the McCA Home Video Network.

## DISH 21.1 IR/UHF Remote
180531

▸ Learns commands from your original remotes
▸ 4 color-coded buttons for future ITV use
▸ Acquires codes for new devices as Dish adds them
▸ Backing Up Remote/Receiver Data
▸ Store's receiver settings in the remote, and remote settings in the receiver

## Bluetooth Adapter
204689

▸ Seamlessly connect your Bluetooth enabled devices
▸ Designed to be used with the DISH Wally Receiver
▸ Compact design allowing you to store the adapter with the unit
▸ Simple USB plug-in connection

## Super Joey Integrator
200235

Integrator is used to connect Super Joey to a DPP LNBF or switch and a port on the McCA Home Video Network.

## DISH Single 1000.2 Kit - Western Arc 110°/119°/129°
DISH-1000.2KIT

## DISH Single 1000.4 Kit - Eastern Arc 61.5°/72.7°/77°
DISH-1000.4KIT

## DISH 500+ with Fine Tune DISH only
185882

‣ Does not include LNBFs
‣ Offering regular programming, HDTV, international, and some local channels
‣ This satellite dish is used by DISH to receive signal from satellite locations 110°, 118.7°, and 119°
‣ Also included with this dish is mounting bracket for optional 129 LNB
‣ The universal wall/roof mount allows you to install the dish on your roof or exterior wall of your home

## Skyware Global™ 1.2 Meter Dish
621200050

‣ Glass fiber reinforced polyester reflector material
‣ One-piece offset feed prime focus antenna optics
‣ Elevation over azimuth mount type
‣ 10° – 70° continuous fine elevation adjustment range
‣ 360° continuous azimuth adjustment range
‣ 2.88" – 3" diameter mast pipe interface

## Skyware Global™ 1.0 Meter Dish
621000050

‣ Glass fiber reinforced polyester reflector material
‣ One-piece offset feed prime focus antenna optics
‣ Elevation over azimuth mount type
‣ 10°–70° continuous fine elevation adjustment range
‣ 360° continuous azimuth adjustment range
‣ 2.38"–3" diameter mast pipe interface

## Winegard 30" Dish
DS-2077

‣ Dual sided galvanized steel
‣ Designed for a single LNB
‣ Powder coat protected
‣ Includes 1.66" Universal mount
‣ Includes Linear Adapter
‣ Compatible with DISH Network LNBs (not included)

## DP LNBF

| Part # | Type |
| --- | --- |
| DP-SINGLELNBF | Single |
| DP-DUALLNBF | Dual |

## DISH500+ LNBF Assembly 110°/118°/119° 144835, 185882, DP-SingleLNBF with Bracket
148746

## DISH LNB

| Part # | Type |
| --- | --- |
| 180255 | FSS |
| 180254 | DBS |

## DISH Stacker and Destacker Kit
SINGLEWIRE-KIT

## DISH Single Wire Bullet Amplifier
176508

3.5GHz DISH single wire and DPP compatible bullet amplifier

## Solo Node
185834

Supports up to 1 Hopper

## Duo Node
185836

A necessary component for all 2 Hopper installations

## DISH Tap
190941

A splitter-type device used to tap into the satellite feed for a Hopper (Host) and then split the connection between the Hopper (Host) and a Joey (Client) or HIC (Hopper Internet Connector)

## DISHPro Plus 44 Switch with Power Inserter
DPP44

‣ Provides reception from four orbital locations
‣ Provides direct connection for four single-tuner receivers or four DP Plus (dual-tuner) receivers when used with DP Plus Separators
‣ Legacy receivers do not require a DP adaptor
‣ Power inserter must be installed onto receiver port 1 of the switch
‣ Can cascade to three switches together
‣ Works with DP, DP Plus LNBF's and switches

## DPP44 RX Power Combiner
176509

‣ Eliminates the need for power inserter on port 1 of the DISHPro Plus 44 Switch
‣ Allows power from a receiver on any port to power port 1

## DISH Isolator
190968

For use with 2 Hoppers to isolate them from each other

## 4 Satellite 256 Drop DON
DON HEADEND

## Fiber Stacker Up To 32 Drops
161563

## ODP-4ST Video Path Fiber Receiver
175487

## DON Rec/Multiswitch
ODDP-43

# PACE CSO PROGRAM

## A Turnkey, Scalable Business Model for Converged Service Operators (CSOs)

Pace's CSO program offers operators a profitable business model that makes sense as they work with HOA's, Assisted Living properties, and within FTG and MTU markets.

Pace offers turnkey video and data solutions to provide operators with a full spectrum of support through its back office functions, call center and marketing tools.

### Earn Through Incentives:

- Commissions – Paid timely for 16+ years
- Amenity Program
- Activation/Installation Incentives
- HBO Incentive
- Showtime Incentive
- Maintenance Fees

| | |
|---|---|
| DISH® Content and Hardware | Build, Balance, Burn Headend Services |
| Headend & Distribution Products | Innovative Content Delivery Solutions |
| QAM Products & Solutions | System Design for Commercial, SMATV & MDUs |
| Fiber Products & Solutions | Competent Sales Staff |
| HD Over Coax | ROI Tools |
| Wired, Wireless, and Point-to-Point Data Products | Back Office Support |
| eDistribution | Data Heat Mapping |

# HEADEND EQUIPMENT

# Complete Solutions for MDU and Commercial Business

## Get expert help on SMATV, QAM headends, and HD Over Coax

## Built, Balanced, Burned and Shipped Ready-to-Install

Pace International is a preferred supplier of DISH headends, and is known for reliable, high-quality hardware and unparalleled customer service. You can count on us for the best DISH headends built, tested and shipped ready to install.

Complete Headend Solutions from Pace Include:

- Built, Balanced, Burned for SMATV, QAM, and HD Over Coax systems
- Order tracking information provided
- System design and tech support
- Payment terms on credit approval
- Programming support
- Knowledgeable sales staff

## 5 Pack Vertical Satellite Receiver Rack Mount for DISH Receivers with 2 Braces
RK5PACK-DISH

- 13.5" L × 19" W × 2RU H
- 3.5" between dividers

## 8 Pack Vertical Rack Mount for DISH Receivers
RK8PACK-DISH

- Holds receivers securely in rack
- Provides easy access to front and back of receiver
- Includes bracing bar
- Rack screws sold separately
- Height adjustable to accommodate different receiver models

## Blank Rack Plate

| Part # | Rack Units (RU) |
|--------|-----------------|
| EZ-1 | 1 |
| EZ-2 | 2 |
| EZ-4 | 4 |

- Fits standard 19" rack
- Color: Black

## Vented 19" Rack Shelf
ES-19-IV

- Front mounted vented shelf for 19" rack
- Load capacity: 80 lbs.
- Available shelf space is 18" wide by 15" deep

## 19 × 14½" Vented Rack Shelf
1RU-ES-19

- Front mounted vented shelf for 19" rack
- Load capacity: 40 lbs.
- Height is 1RU
- Available shelf space is 18" wide by 15" deep

## 1RU Glide Rack Mount Shelf
1RUSR19

14.5" L × 19" W × 1RU

## 19" × 10" 1RU Rack Shelf for DISH Multiswitch
RKSHELF-1RU

## 3 Multiswitch Rack
3-MSR

- Multiswitch rack shelf
- 3 shelves with 2" between

## 5 Multiswitch Rack
5-MSR

- Multiswitch rack shelf
- 5 shelves with 2" between

Wall-mounting options available.

### Headend Caster Set
HECS

- Compatible with HE4PR-84 rack and CAB-1410-77
- Two casters are lockable
- Includes 4 post inserts and 4 casters
- Weight rating on each caster is 300 lbs.

### HE-7226 Hold Down Clamp
EZ-SHORTCLAMP

### Lock Box Lock Bracket
APLB

### 48" Wall Mountable Rack with Hardware
HE4PR48-QAM

### RTA Comm Box™

| Part # | Size |
|--------|------|
| RTA182410 | 20" × 24" × 10" |
| RTA263610 | 26" × 36" × 10" |

- Designed to simplify operations for your installers
- It folds open, fits into the bottom, and can be secured to a rack in minutes
- Versatile for storage on shelves, fitting easily in small spaces

### Lock Box: 12" × 18" × 10"
APB121810

### 72" 4 Post Headend Rack 25.5" Deep
HE4PR-72

### Rackbar Surge Protection
CPS1215RMS

This 12-outlet (6 front and 6 rear) rack mount surge suppressor provides 120V 15A

### Power Strip

| Part # | Size | Outlets |
|--------|------|---------|
| PS-6020 | 60" | 20 |
| PS-3612 | 36" | 12 |

- Long, multiple outlet used in headends

### 83" 4 Post Headend Rack 25.5" Deep
HE4PR-84

## 1RU Rack-Mount Fan (6 Fans)

RKSHF6

‣ Rack spaces: 1RU (1.75")
‣ Rack compatibility: 19" wide
‣ Fan noise: 55 decibels
‣ Power cord length: 7'

## HD Sat Dual Trunk Amp 30dB

TW-4400-HD

A dual LNB launch amplifier. It works equally well in both 950 to 1450MHz dual distribution systems and in dual wideband and Ka/Ku 250-2150 systems. Signals may feed both halves of the amplifier. Outputs work independently from each other to provide a 30 dB max gain. Power may enter from "Out A" or "Out B" port. It includes an external DC plug-in supply to power locally. Unregulated power passes to the LNB inputs to enable trunk line power.

HDD-12-IN

HDD-24-IN

## L-band Distribution System for DISH 'DISH-In-a-BOX'

| Part # | Supports | Dimensions |
|---|---|---|
| HDD-12-IN | 12 Receivers/ 24 Tuners | 20" x 24" x 10" |
| HDD-24-IN | 24 Receivers/ 48 Tuners | 26" x 36" x 10" |

‣ Customizable for specific applications with high quality parts
‣ Supports up to 12 or 24 units from one box
‣ All parts are included and assembled in the box
‣ Knock outs around the box for easy cable insertion
‣ Outdoor models available

## AV Pro Amplifiers

| Part # | Outputs |
|---|---|
| AC-DA12-AUHD | 2 |
| AC-DA14-AUHD | 4 |
| AC-DA18-AUHD | 8 |

‣ 18 Gbps bandwidth
‣ HDMI 2.0a - HDR - HDCP 2.2
‣ 4K60 4:4:4 support (Up to 8K support)
‣ Full HDR support

## AV Matrix Switches

| Part # |
|---|
| AC-MX88-AUHD |
| AC-MX88-UHD |
| AC-MX44-UHD |

‣ 4K Matrix switch with audio de-embedding
‣ HDMI 2.0
‣ 4K60 4:2:0 support
‣ HDR EDID Support
‣ HDCP 2.2

## Sonora DBS Quad Auto-Gain Amp

LAL204A-T

Provides 4 automatic gain controlled outputs of -20 dBm @ 2150 MHz with 32 equal input transponders.

## Sonora 3 SAT 14db Line Amp

LA-143

Boosts the DBS signal level the equivalent of 150 feet of RG-6 cable when the distance from the dish to the switch to the receiver exceeds 200 feet and the signal strength is low.

## Sonora DBS Dual Ka/Ku Line Amp

LA-282A

‣ 28 dB gain
‣ 250 to 2400 MHz
‣ Multiple powering options are included
‣ External 20V 1.2 Amp transformer included

## Sonora 5 Input/Output 14dB L-Band Amplifier

LA-145A-T

‣ Includes 12V power supply
‣ Will not power LNB

## Sonora Autogain Amp 54-2150 MHz

PAL1510-T

‣ Indoor/Outdoor, Die cast Aluminum
‣ Selectable Output Level, 1, -5, -10 dBm switched
‣ Selectable Slope, 10/15 dB switched
‣ Selectable DC OUT, Off or 19 Vdc
‣ Wide Frequency Ban, DBS Ka/Ku
‣ LED Signal Meter, GREEN=AGC Lock

## Power Inserter 14V/18V

SPI-14/18-2150

‣ TruSpec power inserters supply constant DC voltage to C/Ku or DSS Satellite LNBs, microwave down converters and in-line amplifiers
‣ Input voltage 120VAC 60Hz 35W
‣ Operating frequency 400~2150MHz

## Tradewind Micro Modulators

PMM-X

A professional quality channelized heterodyne audio/video modulator with SAW filter for adjacent channel capability. The PLL oscillator with microprocessor can control the output frequency to meet FCC required accuracy and off-setting.

Features:

- Die cast housing
- SAW filter for superior vestigial side band response
- Microprocessor controlled frequency setting meet all FCC accuracy and off setting requirement
- Pre-emphasis defeat switch accessible from side panel for the insertion of composite BTSC stereo signal
- Channels 2-92, listed on the front and rear
- 41 dBmV output
- 3 year limited warranty

Modular design requires 12 slot chassis and power supply.

## Mod Chassis Power Supply

MPC-PSF12/16

- The power supply (4-module wide) is a 70-Watt capacity module specifically designed for mini-modulator applications requiring a highly reliable DC input supply
- High efficiency fully regulated power supply provided the most efficient system performance
- Fan cooled to minimize power consumption and maximize heat dissipation
- Overload protection and precise voltage regulation prevents component damage

## Pico Micro Modulators

MPCM45-X

- Micro modulators from channel 2 to 135
- 5dBmV minimum output for a 66dB in-band carrier to noise ratio provides superior picture quality
- 125 channel frequency range 54~806MHz (CATV 2~13, A1~A5, A~ZZZ, 89~125)
- SAW (surface acoustic wave) filtered for superior adjacent channel performance enables drop-in channel expansion
- Front panel access controls enables easy setup

## Agile MicroMod 45dB

MMA860

- Indoor/Outdoor, Die cast Aluminum
- Selectable Output Level, 1, -5, -10 dBm switched
- Selectable Slope, 10/15 dB switched
- Selectable DC OUT, Off or 19 Vdc
- Wide Frequency Ban, DBS Ka/Ku
- LED Signal Meter, GREEN=AGC Lock

## MicroMod Chassis w/ Power Supply

MPC-12

- Precision engineered chassis enables smooth insertion or removal of modules along slide guides
- Channel modules are plugged individually for ease of installation and removal
- Current overload protection prevents damage to system and ensures prolonged power supply life

## Digital ATSC or QAM Demodulator

DAC-860

- Simple user interface
- ATSC compliant demodulation and FEC decoding in 8VSB modes
- Wide range equalizer eliminates multi-path effects
- Auto scan of programmed channels

## Agile Micro Demodulator

PAD-806

Agile micro demodulator for off-air channels. Extracts composite video from RF. High quality agile demodulator for any TV/CATV channel in the range 54 to 806MHz. The channel display at front panel can show the channel selected by the up/down buttons on the front panel.

## 12 Channel Combiner

PHC-12G

- Frequency bandwidth 40 to1000MHz allows utilization in large bandwidth systems
- Directional coupler design provides low insertion loss and high isolation
- Available in 12 or 24 inputs
- -20 dB test port provides convenient access to system monitoring

## 24 Channel Combiner; 1000MHz

PHC-24G

- Frequency bandwidth 40 to1000MHz allows utilization in large bandwidth systems
- Directional coupler design provides low insertion loss and high isolation
- Available in 12 or 24 inputs
- -20 dB test port provides convenient access to system monitoring

## Full Size Modulator RU Rack Mount
PRM55-X

- Full modulators from channel 2 to 135
- 5dBmV minimum output for a 66dB in-band carrier to noise ratio provides superior picture quality
- 125 channel frequency range 54~806MHz (CATV 2~13, A1~A5, A~ZZZ, 89~125)
- SAW (surface acoustic wave) filtered for superior adjacent channel performance enables drop-in channel expansion
- Front panel access controls enables easy setup

PMSR-208

## Rack Mounted Multiswitch
PMSR-208

Satellite multiswitch for rack mount applications. Requires satellite IF distribution from 950-2150MHz. It will allow users to take two LNB outputs and provide input to a maximum of eight or sixteen receivers. It routes any of the input to any outputs by utilizing the 14/18V switching control from the satellite receivers. This multiswitch is an excellent way to simplify any SMATV installation.

- 2 x 8 Ports
- Provides RHCP and LHCP switching
- Power adaptor supplies power to LNBs
- Input selected by 14V/18V from satellite receiver employing right and left hand circular polarization
- Built-in amplifier to compensate for insertion loss

## Agile FM Stereo Modulator
PAFM

FM stereo modulator with switchable mono or stereo capability. Especially designed for commercial installation, the PAFM provides superior signal-to-noise ratio, separation and enhanced dynamic range. The employment of a phase locked loop tuning circuit ensures that the selected station will not drift. Switchable mono or stereo capability allows for FM transmission versatility.

## Full Size Agile Demodulator
PRD-806

Allows for adjacent channel operation from Master Video for broadcast or CATV channels from 50 to 800MHz. Demodulates VHF, UHF and cable channels from 54 to 806MHz. IRC and HRC can be activated by push button switches located in the front panel. Demodulator incorporates a phase locked loop synthesized LO in conjunction with a non-volatile microprocessor for precise frequency selection. The unit accepts any NTSC television signal in the 54 to 806MHz frequency range and converts it to base band video and audio. Three additional outputs are provided as well as the IF output to monitor the status of the tuner.

## FM Strip Amplifier
PSCA-FM

Rack mounted FM band amplifier designed cover all VHF band frequencies. Automatic gain control is provided to set the output power independent of the input level. This "gain in reserve" feature allows for consistent headend performance. The PSA-FM is a low-noise, high-gain amplifier with excellent signal quality and low distortion for trouble-free operations over wide ambient temperature ranges. Externally adjustable input and output filter controls allow easy re-tuning of any amplifier within band type for special alignment applications, or repair replacement. A precision voltage regulator eliminates performance changes due to loading or power line fluctuations.

## T.0X DUAL NTSC MODULATOR
580602

## T.0X Subrack Passive Combiner
565001

- 1 RU (1.75") chassis
- 7 "F" female type connector inputs aligned with the outputs of a fully loaded T.0X subrack assembly
- 20 dB front panel test port enabling output testing without service interruption
- Max insertion loss: 12 dB @ 1002 Hz

## 30/40db 1000mhz w/sub band return
451280

- Front panel variable gain and slope controls for easy adjustment.
- Two-way capability with a user selectable active/passive return path.
- Power doubling technology for distortion-free, high output level operation.
- Externally accessible -20 dB input/output test ports provide convenient in-service performance monitoring.
- Extremely low power consumption for cost-effective and trouble free operation.
- Cast Zamak chassis with large heat sinks providing exceptional heat dissipation.
- Exceptional conducted and radiated interference performance at full output level.
- Enclosure provides excellent shielding performance, reducing leakage and ingress.
- Built-in, high quality switched power supply.

## To order please contact your Account Manager at Pace International

- Build, Balance and Burn
- Same day shipping
- Receiver firmware downloads
- Online order tracking
- Terms available
- Receiver RID #'s available on eDistribution
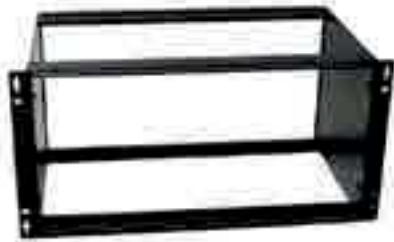
## 19" Subrack Adaptor
5301

- Televes T.05 and T.0X series component rack mount shelf

## T.0X STANDALONE CHASSIS
567401

## Wall Mount for 10 Mods + PSU
5071
0,5m long wall mount strip for 10 modules T05/T0X + PSU

## Televes Jumper Cables
5253

## CDC Control Cable
229284

## T0X Long Data Jumper
422603
Control Bus Long Jumper

## 20/25db MikroKom 2-way Amp
534281

## 30/35db MikroKom 2-way Amp
534481

## T.0X STANDALONE PSU
563902

## QPSK/8PSK to QAM Turbo Transmodulator

| Part # | Output |
|--------|--------|
| XTC-4 | 4 |
| XTC-8 | 8 |

- Tunes and demodulates QPSK/8PSK satellite signals in DVB-S,DVB-S2 modulation including DISH Turbo FEC
- Outputs 4 or 8 transponders of SD or HD video in 4 or 8 QAM-RF Channels
- Superior QAM performance with unequalized MER at 39dB, high output levels, and return loss >15dB
- Internal web server allows any PC to access web pages for easy configuration and simple local and remote operation
- DISH quick start wizard searches for DISH signals for a quick install
- Dense with up to 8 channels in 1RU, low power for low heat and long life

## Subrack Passive Combiner
565001

- 1 RU (1.75") chassis
- Front panel cutout for easy input signal cable management
- 7 "F" female type connector inputs aligned with the outputs of a fully loaded T.0X subrack assembly and adequately spaced so that the coax bridge bars provided with the units may be used to feed the combiner
- Rear "F" female type connector combined output
- 20 dB front panel test port enabling output testing without service interruption
- Max. insertion loss: 12dB @ 1002Hz (balanced across inputs)

## Programming Unit
7234

- Remote control programming unit
- Universal: can connect to any Televes programmable headend unit
- Can program all headend units when used in conjunction with the modem IP

## T0X Switched Power Supply Unit
563901

## T0X CDC IP Headend Controller
5559

Configuration and control of the modules can either be done through the handheld controller or from any internet connection with the use of the CDC headend controller module. The remote control of the system provides two easy to use options with the TSuite computer application or through any internet browser for maximum customer choice.

## T.0X 8PSK/QAM Twin Transmodulator
563701

Each of the T.0X Q/8PSK modules contain 2 independent transmodulators capable of being fed from same or different sources with output frequencies able to be set independently across the entire range in order to provide maximum flexibility.

## Twin A/D Processor
564901

Contains two processors, herein known as module A and module B. Each one of them can be used independently either as a channel converter (output channel different of input channel) or as an amplifier (output channel equal to input channel)

## DigiMod

| Part # | Description |
| --- | --- |
| 554922 | SD Composite/USB to QAM |
| 554932 | HD HDMI/Com/USB to QAM |
| 554942 | Composite/USB-ATSC/8-VSB |
| 554952 | HD-HDMI/Comp/USB-ATSC |

## H30D3 3.0 Meter
593103

The H30's spectrum analyzer includes 2.5, 6.25, 12.5, 25, 62.5, 125, 250, 500MHz, and 1GHz full span settings, as well as automatic reference level adjustment. Real-time processing speeds ensure capture of any fast, intermittent plant impairments. You'll be blown away by the accuracy and level of detail provided by this ultra-portable pocket-sized spectrum analyzer. A definitive tool for identifying and locating noise, interference, ingress and other waveforms that may be affecting cable services quality.

## H30 Protective Case Option
593201

## H30 Power Supply
593203

## H30 Digital CATV Meter
593101

‣ Remote control and measurements
‣ Rugged and light weight
‣ Intuitive user interface
‣ Ergonomic handheld design
‣ Long battery life
‣ Lab-quality precision
‣ Comprehensive functions
‣ Automatic SW upgrades
‣ 100% automatic

## H30 MPEG Service Info Option
593210

## H30 IP Speed/Connectivity Test Option
593211

## H60 Advance
(MPEG4, 3.3GHz, FO, Ethernet)
596002-5989

Based on digital processing, and maintaining the advantages obtained through unique features such as its high range spectrum analyzer and combo mode, the H60 Meter is one of the most advanced field meter on the market.

HDB2312


HDB2520


HDB2540


HDB2620


HDB2640


HDB2840

## QAM Encoder 1RU

| Part # | # of Channels | Resolution |
|--------|---------------|------------|
| HDB2312 | 12 | 480SD |
| HDB2520 | 2 | 720p |
| HDB2540 | 4 | 720p |
| HDB2620 | 2 | 1080p |
| HDB2640 | 4 | 1080p |
| HDB2840 | 4 | 1080p |

- Maestro multibox management software - local or remote configuration and management
- Color LCD for front-panel configuration and at-a-glace monitoring and status
- Breakthrough cable management - each model utilizes a choice of hydra AV cables (extend from a full sized DIN connector to 7 inputs - component HD video, analog and digital audio) or DIN VGA cables
- Ethernet port for configuration and remote management
- Analog and digital audio - internally encoded and broadcast as AC-3
- Integrated closed caption support required for ADA compliance in many applications


ZVPRO610


ZVPRO620

## ZvPro Channel Unencrypted HDMI Video Series

| Part # | Channel Component or VGA Video |
|--------|-------------------------------|
| ZVPRO610 | 1 |
| ZVPRO620 | 2 |

- ZeeVee's best video quality – 1080p/i, 720p, 480p/i in every unit
- Unencrypted component and VGA inputs – address the needs of all deployments
- Single and dual channel versions in a smaller, fan-cooled package – for simple, reliable installation anywhere
- Only 1RU high and shelf or rack mountable


ZVPRO810


ZVPRO820

## ZvPro VGA Video Series

| Part # | Channel Unencrypted HDMI Video |
|--------|-------------------------------|
| ZVPRO810 | 1 |
| ZVPRO820 | 2 |

- ZeeVee's best video quality – 1080p/i, 720p, 480p/i in every unit
- Unencrypted HDMI inputs – address the needs of all deployments
- Single and dual channel versions in a smaller, fan-cooled package – for simple, reliable installation anywhere
- Only 1RU high and shelf or rack mountable



## ZyPerHD Encoder
ZYPERHD-E

- Fully supports HDMI 1.4 with HDCP encryption
- Utilize standard CatX cable and off-the-shelf Gigabit network switches to distribute video
- Can be used in a point-to-point configuration to transmit 1080p video up to 100 meters away
- Power over Ethernet support (PoE)
- Video Wall support up to 4x4



## T.0X Dual ATSC to QAM Transcoder
565301

Televes USA is pleased to announce the latest member of the T.0X family of headend products, the ATSC/QAM to QAM Transmodulator. This new headend offering lets an operator input 2 ATSC or QAM channels and output those as either 2 new QAM channels, or 1 QAM channel with the inputs multiplexed. It even includes cherry picking of the services.



## HD ENC/MOD 2xComponent-QAM
563801
563811 (EAS)

## SD TV ENC/MOD 4xComposite-QAM
563802
563821 (EAS)

## HDTV ENC/MOD 2xHDMI/Component-QAM
563803
563831 (EAS)

- Up to 1080p MPEG-2 and H.264 encoding
- Real-time Dolby® Digital audio encoding
- +55 dBmV fully agile RF output from 5 to 1002MHz (return applications)
- Optional EAS interface with composite video and L/R audio
- Integrated ASI I/O provides easy EAS signal management
- Same form factor and interface as the other T.0X family members
- Comprehensive remote control/monitoring/alarms from any web browser
- Local configuration with hand-held programmer
- Integrated RF Combiner and Ethernet switch for rapid deployment
- Automatic remote firmware upgradeability

# DATA PRODUCTS

IN THIS SECTION

### EnGenius High-Powered Dual Band 3x3:3 Wireless Access Point
EAP1750H

▸ Dual Band high-powered, long-range Ceiling Mount Wireless Access Point that features Fast Roaming, Band Steering, Quantum Beam™ technology

### 802.11ac 3x3 Dual Band High-Powered Wireless Access Point/Client Bridge
ECB1750

▸ Features Fast Roaming, Band Steering and Quantum Beam™ technology, and wireless speeds of up to 1300 Mbps on the 5 GHz band and up to 450 Mbps on the 2.4 GHz band

### Dual Band Wireless Ruggedized AP
ENH1750EXT

▸ 802.11ac 3x3 Dual Band high-powered, long-range Wireless Ruggedized Outdoor Access Point with Quantum Beam™ technology and speeds up to 1300 Mbps on 5 GHz and up to 450 Mbps on the 2.4 GHz band

▸ Designed to operate in a variety of harsh outdoor environments with its IP68-rated housing

### 802.11ac High-Powered, Long-Range Dual Band Wireless AC1750 Outdoor Access Point
ENS1750

▸ Electron Series Access Point, built with weatherproof housing

▸ Speeds up to 450 Mbps on the 2.4 GHz and up to 1300 Mbps on the 5 GHz frequency bands provides high performance to high capacity environments from small business to enterprise level networks with AC technology

### Long-Range 11AC AP/Bridge
ENSTATIONAC

▸ 5GHz high-powered, long-distance 11AC Wireless Outdoor AP/Client Bridge offering dual-PoE ports and a high-gain directional antenna that emits a narrow signal beam for limited interference ensuring stable connectivity, high-bandwidth and 867 Mbps speeds over extremely long distances, extending the network up to 5 miles point-to point

### Power Over Ethernet Adapter
EPA5006GAT

▸ 802.3 at/af-compliant Gigabit Power-over-Ethernet Adapter supports high speed and up to 30W of power to compliant devices such as Access Points, IP cameras or VoIP phones up to 328 ft. away over a single CAT5/6 cable for flexibility in deployment options

### Gigabit PoE Passive Adapter
EPA5006GP

▸ 802.3 at/af-compliant Gigabit Power-over-Ethernet Adapter supports high speed and up to 32.8W of power to compliant devices such as Access Points, IP cameras or VoIP phones up to 328 ft. away over a single CAT5/6 cable

### 48-Port 1U Rack-Mount Managed Gigabit Ethernet PoE+
EWS7952FP

▸ Ethernet ports support IEE 802.3af/at PoE and can supply up to 30W per port for a total of 740W

▸ Full featured Gigabit Ethernet Switch with comprehensive Layer 2 switching capabilities with 4 SFP ports

▸ Integrated Wireless Controller for support of up to 50 EWS devices

▸ 104 Gbps of Switching Capacity

### 24-Port Rack Mount Managed Gigabit Ethernet PoE+

| Part # | Port Supply | Total PoE Budget |
|---|---|---|
| EWS1200-28TFP | 30W | 410W |
| EWS7928FP | 30W | 370W |
| EWS7928F | 30W | 185W |

▸ Full featured Gigabit Ethernet Switch with comprehensive Layer 2 switching capabilities with 4 SFP ports

▸ Integrated Wireless Controller for support of up to 50 EWS devices

▸ 56 Gbps of Switching Capacity

### 8-Port Rack-Mount Managed Gigabit Ethernet PoE+
EWS5912FP

▸ Ethernet ports support IEE 802.3af/at PoE and can supply up to 30W per port for a total of 130W

▸ Full featured Gigabit Ethernet Switch with comprehensive Layer 2 switching capabilities with 2 Gigabit Uplink ports and 2 SFP ports

▸ Integrated Wireless Controller for support of up to 50 EWS devices

▸ 24 Gbps of Switching Capacity
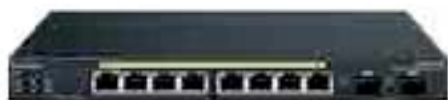
## 8-Port Managed Gigabit Ethernet PoE
EWS2910P

▸ Ethernet ports support IEE 802.3af PoE and can supply up to 15.4W per port for a total of 61.6W

▸ Full featured Gigabit Ethernet Switch with comprehensive Layer 2 switching capabilities with 2 SFP ports

▸ Integrated Wireless Controller for support of up to 50 EWS devices

▸ 20 Gbps of Switching Capacity

## Neutron EWS 24-Port Gigabit Managed Smart Switch
EWS1200-28T

▸ Layer 2 Managed Smart Switch with WLAN Controller & Centralized Network Management

▸ 10/100/1000 Mbps GbE Ports

▸ 56 Gbps Switching Capacity

▸ Easy Web-Based Management Interface, Network Troubleshooting, Monitoring & Email Alerts, Locally Manage Wireless APs via Built-in Controller, Centrally Manage Wired & Wireless Networks via ezMaster

## Neutron EWS 48-Port Gigabit Managed Smart Switch
EWS1200-52T

▸ Layer 2 Managed Smart Switch with WLAN Controller & Centralized Network Management

▸ 10/100/1000 Mbps GbE Ports

▸ 104 Gbps Switching Capacity

▸ Easy Web-Based Management Interface, Network Troubleshooting, Monitoring & Email Alerts, Locally Manage Wireless APs via Built-in Controller, Centrally Manage Wired & Wireless Networks via ezMaster

## Neutron EWS 8-Port Gigabit Managed Smart Switch
EWS1200D-10T

▸ Layer 2 Managed Smart Switch with WLAN Controller & Centralized Network Management

▸ 10/100/1000 Mbps GbE Ports

▸ 20 Gbps Switching Capacity

▸ Easy Web-Based Management Interface, Network Troubleshooting, Monitoring & Email Alerts, Locally Manage Wireless APs via Built-in Controller, Centrally Manage Wired & Wireless Networks via ezMaster

## AP MeshCam
EWS1025CAM

▸ 2-in-1: Mesh 11ac Wireless AP & IP Surveillance Camera

▸ Fast 11ac speeds up to 867 Mbps for Smooth, Buffer-Free Connections

▸ View & Record Suspicious activity with Night Visibility up to 65ft

## EnMesh
EMR3000-KIT

▸ Whole-Home Wi-Fi System blankets entire home or small office in reliable, high-speed wall-to-wall wireless

▸ Provides coverage over approximately 4,500 sq. ft and is easily expanded by adding individual mesh router pods (EMR3000) in larger homes or areas that need more coverage

▸ Self-healing and resilient

▸ No running wires

## 11ac Indoor AP, High-Powered, Dual-Band Managed Wireless Access Point
EWS350AP

▸ Gigabit capabilities and 11ac wireless speeds up to 867 Mbps

## High-Powered Dual Concurrent 802.11ac 3-Stream Neutron Series Managed Wireless Access Point
EWS360AP

▸ Gigabit capabilities

▸ Functions as part of an EnGenius Neutron Series Wireless Management Solution or as a stand-alone Access Point

## 11ac Outdoor AP, High-Powered, Dual-Band 2x2 Managed Wireless Access Point
EWS650AP

▸ High capacity and wireless speeds up to 867 Mbps on 5 GHz and up to 300 Mbps on the 2.4 GHz band

▸ It can function as a stand-alone Access Point or part of a scalable Neutron Wireless Network Management Solution

## 802.11ac 3.3 Dual Band High-Powered, Long-Range Wireless Managed Outdoor Access Point
EWS860AP

▸ Speeds up to 1300 Mbps on 5 GHz and up to 450 Mbps on the 2.4 GHz band

▸ Designed to operate in a variety of harsh outdoor environments with its IP68-rated housing

## WHY ICC

**35%**
Less Cost

Reduction in initial infrastructure cost, ongoing management, and no-fee advanced feature set.

**25%**
Faster

Policy control for content at the device, user, application while considering available bandwidth, increases performance and stability.

**50%**
Less Fees

Included software features at NO cost. Deploy virtual locations, security, management, and service features. Bundled with more AP Licenses than anyone else.

**100%**
Service Revenue

Deploy Networking as a Service at no additional feature cost.
Need Layer 3, PIM, Q-inQ, WIDS, etc. just turn them on when required.

## PRODUCT PORTFOLIO

### Link1000 Series
ICC Link1000 Series SMB Controller

### Link2000 Series
ICC Link2000 Series MSP Controller

### ICX400 Series
ICC ICX400 Series Controller-based
- High performance 802.11ac
- ICX400GAP 2x2 and ICX420GAP 3x3
- 2 RJ-45, 1 USB, Lock, PoE

### ARC Series
ARC2000MAP Controller-based
SMB Access Point
- High performance 802.11n
- 2x2 dual band for small networks
- PoE, managed, and plenum rates

### ICX200 Series
ICC ICX200 Series Controller-based
- High power low cost 802.11n
- 2x2 Single band with 500mW power
- RJ-45 PoE only, small design

### ICX20 Series
ICC ICX20 Series Unified Access Device
- Faster speed and outdoor range
- Ideal for providing outdoor mobility
- UADOS for multi-OS configuration
- 3 Versions based on antenna options

### ICX10 Series
ICC ICX10 Series Unified Access Device
- Affordable, high performance 802.11ac
- Ideal for high performance SMB
- UADOS for multi-OS configuration

### Link5010 Series
ICC Link5010 Series Enterprise POE Switch

## Ruckus ZoneFlex ZF7781CM

‣ Outdoor AP
‣ High-end DOCSIS 3.0 802.11N access point
‣ 500 concurrent users

## Ruckus ZoneFlex ZF7782

‣ Outdoor AP
‣ High-end Carrier Class 802.11n access point
‣ 500 concurrent users

## Ruckus ZoneFlex ZF7782-S

‣ Outdoor AP
‣ High-end Carrier Class Sectorized 120 degree access point
‣ 500 concurrent users

## Ruckus ZoneFlex ZF7782-N

‣ Outdoor AP
‣ Carrier class 802.11N with very high density access point
‣ 500 concurrent users

## Ruckus ZoneFlex ZF7731

‣ Outdoor AP
‣ Point-to-Point/Multi Point Bridge

## Ruckus ZoneFlex R600

‣ Indoor AP
‣ Mid range 802.11ac dual concurrent access point with BeamFlex+
‣ 500 concurrent users

## Ruckus ZoneFlex R700

‣ Indoor AP
‣ High-end 802.11ac dual concurrent access point with BeamFlex+
‣ 500 concurrent users

## Ruckus ZoneFlex R710

‣ Indoor AP
‣ High-end 802.11ac dual concurrent access point with BeamFlex+
‣ 500 concurrent users

## Ruckus ZoneFlex T300 Series

‣ Outdoor AP
‣ Enterprise class 802.11ac access point with integrated omni or external antennas (5GHz)
‣ 500 concurrent users

## Ruckus ZoneFlex T301 Series

‣ Outdoor AP
‣ Enterprise class 802.11ac access point with 120 degree or 30 degree integrated antennas
‣ 500 concurrent users

## Ruckus ZoneFlex H500

‣ Indoor AP
‣ Dual-band Universal wall mounted 5 port Gigabit Wi-Fi switch
‣ 100 concurrent users

## Ruckus ZoneFlex R300

‣ Indoor AP
‣ 802.11n dual concurrent entry level access point
‣ 250 concurrent users

## Ruckus ZoneFlex ZF7982

‣ Indoor AP
‣ High end 802.11n dual concurrent access point with BeamFlex+
‣ 500 concurrent users

## Ruckus ZoneFlex R500

‣ Indoor AP
‣ Mid range 802.11ac dual concurrent access point with BeamFlex+
‣ 500 concurrent users

### Ruckus ZoneDirector 1200
- ▸ Centrally managed Smart Wireless LAN (WLAN) system developed specifically for small-to-medium enterprises (SME's)
- ▸ Purpose-built to address the gap between standalone, feature-deficient access points (APs) that must be individually managed and the costly, complex high-end enterprise systems that are overkill for most small business environments.

### Ruckus ZoneDirector 3000
- ▸ First free enterprise-class Smart Wireless LAN systems that deliver a secure, robust and easily expandable WLAN solution to an unmatched total cost of ownership.
- ▸ Supports up to 500 ZoneFlex Smart Wi-Fi access points and 10,000 clients from a single location.

### Ruckus ZoneDirector 5000
- ▸ First WLAN controller to uniquely combine power, simplicity and scalability into an affordable system.
- ▸ Supports up to 20,000 clients and 2048 WLANS per device, manages up to 1000 ZoneFlex Smart Wi-Fi access points from a single location.

### Ruckus SmartZone Controller 100
- ▸ Uniquely combines power, simplicity and scalability into an affordable system.
- ▸ Supports up to 25,000 clients and 2,000 WLANs per device, manages up to 1,024 ZoneFlex Smart Wi-Fi access points from a single location clustering up to 3,000 Aps and 60,000 clients.

### Ruckus SmartCell Gateway 200
- ▸ Eliminates the difficulties that service providers and large enterprises are experiencing with building and managing large-scale WLAN networks.
- ▸ Supports networks with tens of thousands of Aps, hundreds of thousands of subscribers, and tens of Gbps of aggregate traffic.

## Ruckus Unleashed
- ▸ Controller-less architecture simplifies configuration with set-up in just 60 seconds
- ▸ Reliable and resilient with Ruckus technologies such as BeamFlex™+ adaptive antenna technology, ChannelFly™ dynamic channel management technology and PD-MRC
- ▸ Easy migration to controller-based Wi-Fi as businesses grow to multiple sites
- ▸ Available in the R700, R600 and T300

**Ruckus Unleashed R700**  **Ruckus Unleashed R600**  **Ruckus Unleashed R500**  **Ruckus Unleashed T300**

# D-Link®

## THE RIGHT SWITCH
## FOR YOUR BUSINESS

Offering a comprehensive suite of business class switches that provide a full range of high-value network solutions.

### D-Link 5-Port Gigabit Desktop Switch

▸ Offers an economical way for home and media centers to benefit from increased bandwidth of gigabit Ethernet. D-Links comprehensive family of home devices that make use of D-Links Green Technology providing energy savings, reduced heat, and longer product life without sacrificing performance

▸ Up to 1 Gbps of dedicated bandwidth per port and up to 2 Gbps bandwidth in full-duplex mode

▸ Supports IEEE 802.1p Qos Prioritization

▸ Jumbo frame support up to 9720 bytes

▸ Plug and Play installation

### D-Link 24-Port Switch

▸ Offers 20 or 44 10/100/1000 Mbps Poe Gigabit Ethernet ports and 4 combo 1000BASE-T/SFP Gigabit Ethernet ports. Each 10/100/1000 Mbps port of DGS 3120-24PC/48PC Supports IEEE 802.3t Power over Ethernet standard. The default power budget is 370W and can be expanded to 740W with the DPS-700 Rps

▸ 802.1D/802.1W/802.1s Spanning Tree

▸ Security, Traffic Monitoring and Bandwidth Control

▸ OAM

▸ Configuration Management

### D-Link 8-Port Gigabit Desktop Switch

▸ Offers an economical way for home and media centers to benefit from increased bandwidth of gigabit Ethernet. D-Links comprehensive family of home devices that make use of D-Links Green Technology providing energy savings, reduced heat, and longer product life without sacrificing performance

▸ Up to 1 Gbps of dedicated bandwidth per port and up to 2 Gbps bandwidth in full-duplex mode

▸ Supports IEEE 802.1p Qos Prioritization

▸ Jumbo frame support up to 9720 bytes

▸ Plug and Play installation

### D-Link 48-Port Switch

▸ Offers 20 or 44 10/100/1000 Mbps Poe Gigabit Ethernet ports and 4 combo 1000BASE-T/SFP Gigabit Ethernet ports. Each 10/100/1000 Mbps port of DGS 3120-24PC/48PC Supports IEEE 802.3t Power over Ethernet standard. The default power budget is 370W and can be expanded to 740W with the DPS-700 Rps

▸ 802.1D/802.1W/802.1s Spanning Tree

▸ Security, Traffic Monitoring and Bandwidth Control

▸ OAM

▸ Configuration Management

## MikroTik 12port router 2G ram/USB/serial/RM
CCR1016-12G
Available with a 1U rackmount case, has twelve Gigabit ethernet ports, a serial console cable and a USB port. The CCR1016-12G has two SODIMM slots, by default it is shipped with 2GB of RAM, but has no memory limit in RouterOS (will accept and utilize 16GB or more). It comes with power supply and 1U rackmount case.

## Harmonic CMTS - NSG Exo Indoor Chassis, 1U, AC, Combined US/DS on single RF port, 16DS/ 4US, D3.0 CMTS & EQAM
NSGEXO-CH-CRF
NSG Exo simplifies the ability to support data, video and voice services to dense pockets of coax infrastructure, providing the ability to target new customer segments, including MDUs, hospitality locations, education campuses and office buildings.

## MikroTik 8port router/2 SFP/2G ram/USB/serial/RM
CCR1009-8G1S1S
Mikrotik Cloud Core Router. 9 Core Tilera CPU with dual power supply. 8x GBit ports, 1x SFP, 1x SFP+.

## MikroTik MMCX-RPSMA Pigtail
ACMMCXRPSMA
MMCX to RPSMA pigtail,for adding second wireless interface to BaseBox2 or BaseBox5. Length of cable 260mm.

## MikroTik 2.4Ghz 5dbi Dipole Antenna with RPSMA Connector
ACOMNIRPSMA
You can take BaseBox2 and simply attach two of those antennas on connectors of BaseBox2 to have 2x2 MIMO 2.4Ghz Ap. By doing the above, you can have 2.4GHz OmniTik, ideal for outdoor campus areas, for example, campings or trailer parks. Antennas are waterproof, so you can use BaseBox without top cover if both antennas are properly attached.

## MikroTik12port router/2 SFP+/4G ram/USB/serial/RM
CCR1016-12S-1S+
Comes with redundant power supplies and one RJ45 SFP 10/100/1000M copper module.

## PICO Mini Cable Modem Term System
MINICMTS200A
Optimized for smaller cable operators. Supports up to 400 DOCSIS cable modems. Offers 16 downstream bonded channels. Provides high-speed data delivery: 800 Mbps downstream and 120 Mbps upstream. Features an intuitive web interface for simple configuration, management, and debugging

## MikroTik12port router/4 SFP+/4G ram/USB/serial/RM
CCR1036-12G-4S
The device comes in a 1U rackmount case, has four SFP ports, twelve Gigabit ethernet ports, serial console and a USB port. A color touchscreen displays device status, traffic graphs, or provide access to simple configuration options.

## MikroTik 10port 1POE, 1SFP, BARE BOARD

RB2011UIAS-2HND

Powered by the new Atheros 600MHz 74K

MIPS network processor, has 128MB RAM, five Gigabit LAN ports, five Fast Ethernet LAN ports and SFP cage (SFP module not included!). Also, it features powerful (up to 1W!) dual chain 2.4Ghz 802.11bgn

wireless, RJ45 serial port, microUSB port and RouterOS L5 license.

## MikroTik 10port router 5G/5 fast, 1POE,128G RAM, 1SFP, USB

RB2011UIAS-IN

Designed for indoor use, and available in many different cases, with a multitude of options. The RB2011 is powered by RouterOS. Dynamic routing, hotspot, firewall, MPLS, VPN, advanced quality of service, load balancing and bonding, real-time configuration and monitoring - just a few of the vast number of features supported by RouterOS.

## MikroTik Rackmount 5x Ethernet Router

RB2011UIAS-RM

Comes with 1U rackmount enclosure, LCD panel and power supply. Features PoE output on LAN port 10. It can power other PoE capable devices with the same voltage as applied to the unit. Less power adapters and cables to worry about. Maximum load on the port is 500mA at 24V for 12W of output support SXT and other CPE devices.

## MikroTik 8port SFP+ router/1G port/16gig ram/2 USB/3mem card

CCR1072-1G-8S+

Powered by a Tilera 72 core CPU, each core is clocked at 1GHz, and to fully utilize this power, the CCR1072 is equipped with eight independently connected 10G SFP+ ports.

## MikroTik 24port router/switch, 1 SFP, 128G ram, USB, serial RM

CRS125-24G-1SRM

Fully functional Layer 3 switch, and is powered by the familiar RouterOS. All the specific Switch configuration options are available in a special Switch menu, but if you want, ports can be removed from the switch configuration, and used for routing purposes.

## MikroTik 10port router 5G/5 fast, 1POE, 1SFP, USB, 64G RAM

RB2011ILS-IN

Contains SFP cage for gigabit SFP transceivers and ideal solution for FTTH (Fiber To The Home) implementations. The RB2011iLS has 11 ports: Gigabit SFP cage and five Gigabit Ethernet ports that can be switched together providing affordable wire speed Fiber-to-Copper converter, and additional five Fast Ethernet ports. Board can be powered by power jack or PoE.

## MikroTik 10port 1gig router, 1G ram, USB

RB3011UIAS-RM

New multi port device, running an ARM architecture CPU for higher performance. Has ten Gigabit ports divided in two switch groups, an SFP cage and for the first time a SuperSpeed full size USB 3.0 port, for adding storage or an external 3G/4G modem.

## MikroTik 8port router, 2 SFP+, 4G ram, USB, serial, RM

CCR1036-8G-2S+

Has two SFP+ ports for 10G interface support (SFP+ module available separately). It uses the same 36 core Tilera CPU as the other CCR1036 model, and delivers the same performance, but now, ten gigabit links are possible.

## MikroTik 8port router, 2 SFP+, 16G ram, USB, serial, RM

CCR1036-8G-2S+EM

Core CPU, Cloud Core Router, 8x Gigabit ports, 2x SFP+ ports, Color touchscreen LCD, 16GB memory installed.

## MikroTik RouterBOARD 1100AHx2

RB1100AHX2

1U rackmount Gigabit Ethernet router - with a dual core CPU, has thirteen individual gigabit Ethernet ports, two 5-port switch groups, and includes Ethernet bypass capability. 2GB of SODIMM RAM are included, there is one microSD card slot, a beeper and a serial port.

## MikroTik 5port network Switch

RB260GS

Small SOHO switch. It has five Gigabit Ethernet ports and one SFP cage powered by an Atheros Switch Chip. Tested and recommended to use with MikroTik SFP modules: S-85DLC05D, S-31DLC20D and S-35/53LC20D (not included)

### MikroTik 5port 1gig router, BARE BOARD

**RB450G**

Five port Gigabit ethernet router. Comparing to the RB450, the RB450G, adds Gigabit speed capability, but also 256Mb of RAM, a faster CPU and a microSD card slot for file storage. The device is powered by a fast AR7161 680MHz Atheros CPU, and also includes a temperature sensor and voltage monitor.

### MikroTik QRT5 24db OUTDOOR ANTENNA 5GHz DUAL N

**RB911G-5HPNDQRT**

Rugged outdoor flat panel antenna, with a built in RouterBOARD. The device has a 24dBi antenna and a high power 5GHz wireless transmitter.

### MikroTik RB912 series 2.4G B/G/N BARE BOARD

**RB912UAG-2HPND**

Small wireless router with an integrated 2.4GHz high power wireless card and an additional miniPCIe slot for 802.11 wireless, or 3G card. The Gigabit port helps to utilize the full potential of 802.11n wireless speeds.

### MikroTik 5port 1gig router

**RB750GR2**

Small five port Gigabit ethernet router in a nice plastic case for managing your wired SOHO network.

The unit is equipped with a powerful 720MHz CPU, 64MB RAM, five Gigabit Ethernet ports and a RouterOS L4 license. The device supports 6-30V input voltage and passive PoE input

### MikroTik 2.4GHz Dual Chain 802.11b/g/n Integrated Sector AP SXTG-2HnD, RouterOS L4, GPOE, PSU, pole mount

**RBSXTG2HND**

High speed 2GHz outdoor wireless device with a Gigabit port. With a powerful 60 degree sector antenna, it can be used for point-to-point links, as a CPE for point-to-multi-point installations or even as an AP/Sector because of it's wide beamwidth antenna.

### MikroTik RBSXTG-5HPacD-HG - SXT HG ac

**RBSXTG-5HPACDHG**

High Gain version of the SXT G 802.11a/n/ac model, equipped with an improved 5GHz 17dBi 24 degree antenna, Gigabit Ethernet port and RouterOS L4 license.

### MikroTik Metal2 POE b/g/n OUTDOOR HI-power W/OMNI ANTENNA

**RBMETAL2SHPN**

Completely waterproof, rugged, and super high powered RouterBOARD Metal. 2.4Ghz with 1600mW TX power. Fully sealed, industrial design metal case, powered by RouterBOARD and RouterOS. 1.6 WATT of output power Comes with L4 license. Works in the 2GHz frequency (2192-2732MHz depending on country regulations)

## MikroTik SFP+ module 10G MM 300m 850nm

S+85DLC03D

10G SFP+ transceiver with a LC connector, 850nm, for up to 300 meter Multi Mode fiber connections Units are tested and compatible with CCR1036-8G-2S+ and CCR1036-8G-2S+EM. Units are compatible with non-MikroTik SFP devices as well.

## MikroTik SFP+ module 10G SM 10km 1310nm

S+31DLC10D

10G SFP+ transceiver with a LC connector, 1310nm, for up to 10 kilometer Single Mode fiber connections. Units are tested and compatible with CCR1036-8G-2S+ and CCR1036-8G-2S+EM. Units are compatible with non-MikroTik SFP devices as well.

## Televes CoaxData 200Mbps (2xETH)

768903

Can transmit IP data over coaxial and power line cable installations with coexistence of TV channels or other existing services. The Coaxial Ethernet modem immediately connects multiple computers on the coaxial and/or power line network in your home, hotel, or buildings without additional wiring.

## Televes CoaxData 1Gbps (1xETH+1xSFP)

769282

Can transmit IP data over coaxial and power line cable installations with coexistence of TV channels or other existing services. The Coaxial Ethernet modem immediately connects multiple computers on the coaxial and/or power line network in your home, hotel, or buildings without additional wiring.

## MikroTik RB912UAG-2HPnD-OUT BaseBox2 1G POE b/g/n outdoor w/ SMA NEEDS ANTENNA

RB912UAG-2HPNDO

Outdoor 2.4Ghz wireless device fitted with two SMA connectors for antennas, and a cable hood for protection against moisture.

## MikroTik RB921UAGS-5SHPacD-NM Netmetal5 1G POE n/ac outdoor w/ SMA NEEDS ANTENNA

RB921UAGS-5SHPA

## MikroTik SFP GPON ONU module

SFPONU

Allows any RouterBOARD device to be used for Fiber to Home installations without any special modems or software. A plug and play solution means you simply plug it into your device, and no special configuration is needed. It is supported by all our SFP products, with any RouterOS version - all configuration will be done on the ISP side.
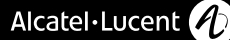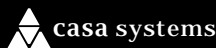
# PACE

Add an additional revenue stream with a turnkey video solution from Pace!

## Major Brands We Carry

# LTE
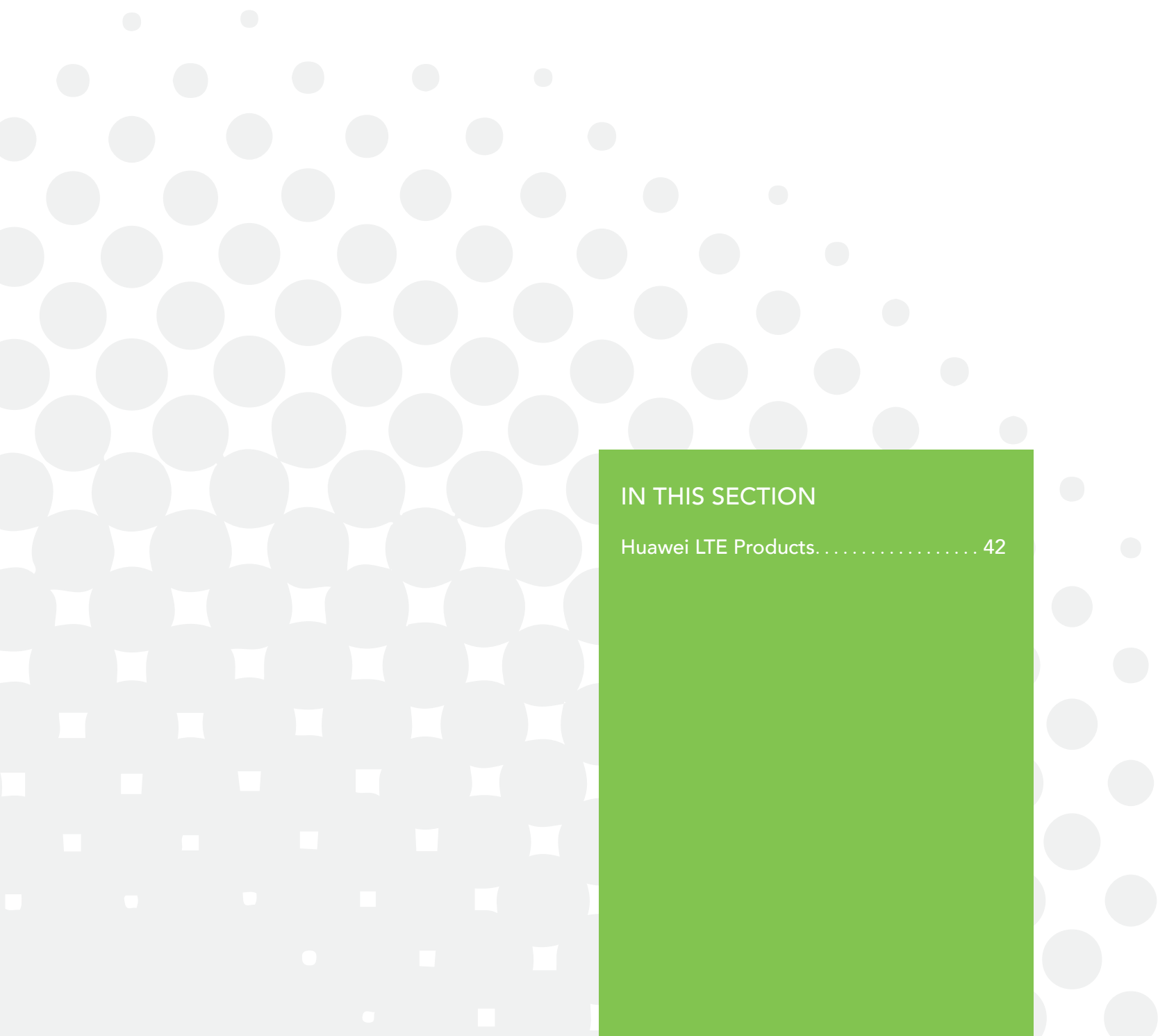
## IN THIS SECTION

### Service Engine
ESE6201
- Provides standard interface to enterprise's management and application system
- 4 Gbps (512 bytes per packet)

### LTE DBS3900
DBS3900
- Frequency band 38/40/41/42 (2.6/2.3/2.5/3.65 GHz)
- 20 W for 2.6/2.3/2.5 GHz
- 16 W for 3.65 GHz
- 8 RF ports of RRU
- BBU: IP20, RRU: IP65

### LTE Indoor CPE
EA280
- TDD LTE: Band 38/40/41/42/43
- FDD LTE: Band 7
- Transmit power: 23 dBm
- Power consumption: < 12 W
- DL 4x4 MIMO, 2CA

### LTE Outdoor CPE
EA380
- TDD LTE: Band 38/40/41/42/43
- FDD LTE: Band 7
- Transmit power: 23 dBm
- Power consumption: < 25 W
- DL 4x4 MIMO, 2CA

### eLTE-U AirNode
EAN3810A
- Frequency band: 5.47-5.725 GHz, 5.725-5.85 GHz
- Cell bandwidth: 20 MHz
- Input power: -48 V DC
- FE/GE electrical port

### eLTE-U Data Access Unit
EA680
- TDD LTE 5G: 5470 MHz to 5850 MHz
- WLAN: 2.4 GHz ~ 2.4835 GHz
- Transmit power: LTE - 21 dBm, WLAN - 16 dBm
- Power consumption: < 25 W

### NMS: eSight
ESIGHT
- Web-Based architecture
- Fault Assistant Resolved Solution (FARS)
- Topology management
- Performance management
- Configuration management

### Huawei OptiX RTN 380H
RTN380H
- 10 Gbit/s throughput EBand all outdoor radio
- Frequency Bands: 71 GHz to 86 GHz
- Modulation: QPSK to 256 QAM
- Channel Spacing: 62.5 MHz, 125 MHz, 250 MHz, 500 MHz, 750 MHz, 1000 MHz

### Huawei OptiX RTN 380
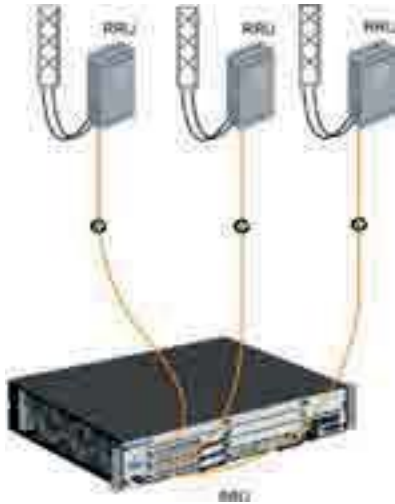RTN380
- 4 Gbit/s throughput EBand all outdoor radio
- Frequency Bands: 71 GHz to 86 GHz
- Modulation: QPSK to 64 QAM
- Channel Spacing: 62.5 MHz, 125 MHz, 250 MHz, 500 MHz, 750 MHz

### Huawei OptiX RTN 320
RTN320
- Frequency Bands: 11 GHz, 18 GHz, 23 GHz
- Modulation: QPSK to 4096 QAM
- Channel Spacing: 30 MHz, 40 MHz, 50 MHz

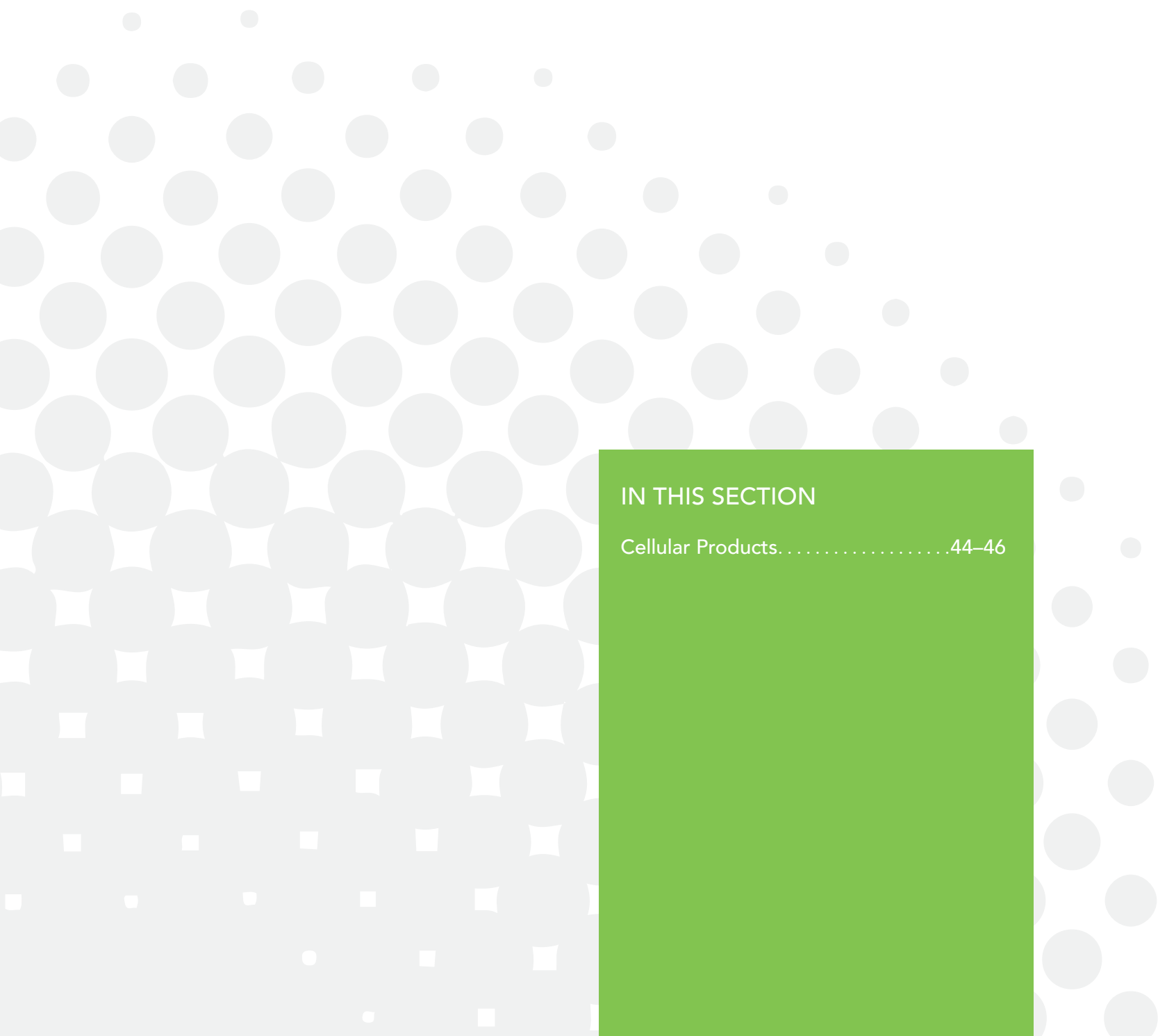### Huawei OptiX RTN 360
RTN360
- Frequency Bands: 59 GHz to 64 GHz
- Modulation: 16 QAM
- Channel Spacing: 200 MHz
- Capacity: 650 Mbit/s
- Power consumption: < 20 W

# CELLULAR BOOSTING

## 44+ YEARS
as an industry leading distribution company.

**Boost any cellular carrier's 4G signal on your next commercial property deployment!**

In a commercial environment, cellular signals are diminished by reflective glass, dense housing brick, low E roofing and cell tower proximity. Pace has a solution with Wilson signal boosters. End user benefits of Wilson signal boosters include: improved reception, increased battery life, fewer dropped calls, faster data speeds and works with any cellular provider!

To your property owners, this means a more satisfied tenant or customer experience. It is perfect for any market including: professional A/V, healthcare, educational institutes and hospitality.

How does it work?
An external antenna delivers a cellular signal to a WilsonPro booster where the signal is amplified and relayed to mobile phones.

How does this benefit you?
• Training, deployment time and cost are much less than alternative solutions
• The ability to boost ALL cellular carriers on the property
• Generates additional revenue with an installation opportunity

## Wilson Pro 1000R Rack-Mounted Commercial Booster
460237

- Easy rack-mounted installation
- +15 dBm maximum downlink power
- XDR technology that prevents signal overload and booster shutdown
- Full color display, indicating gain and power levels of each band

## Wilson Pro 4000R Rack-Mounted Signal Booster 50 Ohm
460031

- Boosts signal inside a building or large area covering up to 100,000 sq. ft
- Works with all phones and all carriers
- Supports talk, text, and 4G data services
- Easy rack-mounted installation and onboard software for better control
- Extra Dynamic Range

## Wilson Pro 4000 Commercial Signal Booster
460223

- Highest downlink and uplink power for larger coverage and greater user capacity
- Self-optimizing design minimizes installation time
- XDR technology that prevents signal overload and booster shutdown
- Color LCD screen with four way navigation for easy and effective control

## Wilson Pro 70 Plus Signal Booster
460127-DK1

- Coverage up to 50,000 sq. ft.
- Highest downlink power available
- Most powerful 4G 75 Ohm system in the market
- Digital display to view Automatic Gain Control
- Fitted with F Connectors
- Kit includes: Pro 70 PLUS Amp Kit, RF Signal Meter, Wide Band Directional Antenna, 2 ft. RG11, SMA Male to N Male, N Female to F Male

## Wilson Pro 70 Signal Booster
463134-DK1

- Coverage up to 25,000 sq. ft.
- Powerful 4G 75 Ohm system
- Digital display to view Automatic Gain Control
- Fitted with F Connectors
- Kit includes: Pro 70 Amp Kit, RF Signal Meter, Wide Band Directional Antenna, 2 ft. RG6, SMA Male to N Male, N Female to F Male

## we**boost** RV 4G
470201

- Multi-user wireless booster
- Extends cellular signal range while parked
- Reliable cell signal and more consistent data speeds
- Faster data downloads
- Longer battery life – up to 2 hours longer talk time

## RF Signal Meter
460118

- Included in above kits
- Works with 700, 800, 1900 and 2100 MHz spectrum bands
- Configurable with a variety of Wilson antennas
- Detects available signal indoors and outdoors
- Built in rechargeable battery

## we**boost** Drive 4G-S
470107

- Single-user in-cradle booster
- Extends cellular signal range in-motion
- Reliable cell signal and more consistent data speeds
- Faster data downloads
- Longer battery life – up to 2 hours longer talk time

## we**boost** Drive 4G-M
470108

- Single-user in-cradle booster
- Extends cellular signal range in-motion
- Reliable cell signal and more consistent data speeds
- Faster data downloads
- Longer battery life – up to 2 hours longer talk time

### Panel Antenna for Inside Window Mounting, 50ohm

463134

- Directional antenna
- Built-in ground plane
- Mounting tape and suction cups included
- Designed for fixed (building amplifier) installations
- Combines Cellular, SMR (iDEN) and PCS1900 frequencies into one indoor antenna
- Provides a cost-effective solution for high volume deployments and multiple in-building systems
- Low profile blends easily with internal environment for unobtrusive appearance
- Convenient and simple to install

### we**boost** Connect 4G Cell Phone Signal Booster Kit

470103

- Wireless operation
- Works on all generations of LTE, CDMA, TDMA, AWS and GSM
- For 800MHz (850MHz) Cellular and 1900MHz PCS bands
- Supports multiple phones and data cards simultaneously
- Attractive, sleek design
- Automatic overload/oscillation protection

### we**boost** Home 4G Cell Phone Signal Booster Kit

470101

- Wireless operation
- Works on all generations of CDMA, TDMA, LTE and GSM
- For 700/800MHz (850MHz) cellular and 1900MHz PCS and 2100 AWS bands
- Supports multiple phones and data cards simultaneously
- Attractive, sleek design
- Automatic overload/oscillation protection
- Receiver sensitivity -108dBm, CDMA FER 1/2%
- Up to 2 watts power amplifier
- FCC and IC type accepted

### we**boost** Connect 4G-X Cell Phone Signal Booster Kit

460127

- Supports CDMA, GSM, LTE, HSPA+ and WCDMA technologies
- Works with AT&T cellular, PCS and LTE Only
- Oscillation protection
- Extends cell phone battery life
- Made in the USA
- Up to 10 times more powerful than a typical cell phone
- Wireless operation
- Works on all generations of CDMA, TDMA, and GSM
- 850 MHz, 1900MHZ, AT&T 700 MHz 4G networks
- Supports multiple phones and data cards simultaneously
- Attractive, sleek design
- Automatic overload/oscillation protection

### we**boost** Signal 3G M2M Signal Booster Mini Mag Kit

470209

- Bidirectional amplifier boosts signal to and from cell site
- Works with CDMA networks only
- FCC type accepted, industry Canada certificated
- Configurable to fit virtually any M2M situation
- Maximum 3 watts output power on 800MHz
- Maximum 2 watts output power on 1900MHz
- Passes TIA/EIA-98-E transmit tests for evaluating CDMA cellular phones
- Power control logic ensures maximum output power is within cellular standards
- Automatic gain control
- Can be used in a fixed or mobile application
- FCC and IC type accepted
- US and foreign patents pending

### Custom Terminated Cellular Coax
LMR-240 AND LMR-400
**Call for more details**

# FIBER OPTIC

## IN THIS SECTION

**ETH-SFP Adapter - 2 Fiber**
769210

**ETH-SFP Adapter - 1 Fiber**
769211

**SFP Module ( B+, 20km)**
769410

**SFP Module (Gbe)**
769411

**OLT-512**
769401

**Outdoor Compact F.O Node w/Return Path TX**
231080
Optical Level Control provides stable output levels within wide optical input range (-8 to 1dBm).

**Fiber Optic Outdoor Node**
231280
Compact outdoor optical node / receiver range, featuring high RF output with AGC feature, extended return bandwidth, and comprehensive attenuation / tilt controls.

**FiberKom RFoG Mininode w/ Return TX (1310nm / 3dBm)**
238081
RFoG and G/EPON applications. 4dBm, 6dBm and 10dBm Broadband and CATV transmitters.1310nm & 1550nm versions. L -Band capable multi-window receivers (1200 – 1600 nm). CATV FTTU Mini receiver (with OLC).20dBm EDFA rack-mounted amplifier.

High power outdoor nodes. RFoG MiniNodes with built in WDM. Video overlay WDM modules.

**FiberKom FTTx CATV RX (w/ OLC) - 40dBmV - DC PSU**
238101

**High Power 1550nm Optical Amp**
234228

▸ Video overlay multiplexing with GPON signals
▸ Typical output power of 20 dBm
▸ 24 Vdc power connectors

**8port OLT512**
769401
Compact end-point service provider for customers willing to deploy an FTTX infrastructure using GPON technology. Specially designed for medium/small residential environments and compatible with ITU-T G.984X , Televes-OLT-8CH is a cost effective solution that enables triple play services (Data, TV, telephone) for up to 512 subscribers with 2,5Gbps/1,24Gps downstream/upstream bandwidth.

**ONT RF 4xGbE + 2xFXS + 2xUSB + WiFi b/g/n+**
769502

**ONT 4xGbE + 2xFXS + 2xUSB**
769504

**ONT 4xGbE w/PoE + 2xFXS + 2xUSB + WiFi 802.11a/c + RF Out**
769505

**ONT STANDARD (1xGbE + RF Out)**
769508

## Fiber Attenuator
OTOA-1000

- Low-cost method for adding step-variable optical attenuation without interrupting connections
- Passive device intentionally induces macrobend losses around a series of restrictive curvatures
- Combination of 1dB, 2dB and 4dB loops provides step-variable attenuation from 1dB through 7dB
- Built-in strain-relief mechanism minimizes changes in attenuation over time and temperature

## LL2450 MIN 12ct Splice Tray
91957-00

- Tray stores 12 single fusion splices
- Interchangeable inserts allow for single or mass fusion or mechanical splices
- Pre-molded snaps that securely hold buffer tubes or spiral wrap while splicing
- In-line or butt splice capability
- Pre-formed radiuses maintain bend requirements
- Interlocking base and cover provides tray stability without the use of a bolt
- Extended finger guides easily store and route loose fiber or ribbon

## LL2400 24ct Splice Tray
91710-06

- Interchangeable inserts allow for single or mass fusion or mechanical splices
- Pre-molded snaps that securely hold buffer tubes or spiral wrap while splicing
- In-line or butt splice capability
- Pre-formed radiuses maintain bend requirements
- Interlocking base and cover provides tray stability without the use of a bolt
- Extended finger guides easily store and route loose fiber or ribbon

## SC-APC PIGTAIL 2M
C146523-0002

## SC+SC Splice Block
C147880

## FC-SC Fiber Splice Block
C130082

- FC - SC simplex
- Ceramic insert
- Stainless steel

## 1310/1550 1 × 8, 19" RM Even Split
F377304400EVEN

## 2 Way 50/50 Even Split LGX SC/APC
LGXC1X25050SAPC

- LGX 1x2 fiber optic coupler splitter

## 2 Slot LGX Chassis
EQFCRML2

## Single Mode SC/APC-SC/APC Jumper

| Part # | Length |
| --- | --- |
| SCA-SCA-PH30S-1 | 1M |
| SCA-SCA-PH30S-3 | 3M |
| SCA-SCA-PH30S-5 | 5M |
| SCA-SCA-PH30S10 | 10M |
| SCA-SCA-PH30S20 | 20M |
| SCA-SCA-PH30S30 | 30M |

## SC/APC to SC/APC 5M Single Mode Jumper
F9C11A1GCBB05M

Single mode simplex riser patch cord

## SC/APC to FC/UPS 2M Jumper
F9C21A1GCB702M

Single mode duplex riser patch cord

## 2M FC/UPC-Pigtail Jumper
F9G11A12GC7002M

## 50' SM SC/APC Duplex Pigtail
F9G21A1GCB050F

## T.0X Dual Return Path F.O.
234901

High density solution for the return path channel optical reception. Provides a wide input optical margin (from -16dBm to 1 dBm), to adapt to high dispersion networks on link losses.

## T.0X 8-Ch EDFA 20dBm 1550nm Optical Transmitter
234220

## T.0X 8-Ch YEDFA 20dBm 1550nm Optical Transmitter
234228

## 12 Slot LGX Chassis
EQFCRML12

## Professional Fusion Splicer Kit
232103

Incorporates SIX alignment engines to work in different axis during the electric arc fusion. It makes a perfect splice within 8 seconds. Its transport case is made with high durability ABS, also it can be used as a work surface.

## Handheld Splicer
232130

Capable of doing a splice in 7 seconds. Easy to carry thanks to its small weight and dimensions. The product also includes a carry case with all the necessary accessories.

## Pocket Fusion Splicer Kit
232110

Splicer has 4 possible blending modes (auto, calibrate, regular and special). Through specific interchangeable heads lets you blend connectors directly or fibers. It is designed to work at heights or areas of difficult access.

## 1 × 8 Even Split, 1310/1550, LGX Cassette Coupler with SC/APC
LGXC1X8EVENSAPC

- ‣ LGX compatible packaging
- ‣ For both 1310/1550 nm windows
- ‣ Low insertion loss
- ‣ Low polarization dependent loss (PDL)
- ‣ Variety of coupling ratios
- ‣ High directivity
- ‣ Environmentally stable and reliable

## Domestic Optical Receiver
2311

- ‣ Self-adjusting optical receiver
- ‣ Domestic optical receiver that provides a stable RF signal level at its output, independently of the optical attenuation of the distribution network of fiber optics

## 19" Subrack Adaptor
5301

- ‣ Use with T03/T05 modules

## T0X Switched Power Supply Unit
563901

## Optical Transmitter

| Part # | Output Level |
|--------|--------------|
| 233306 | 1310nm 6dBm |
| 233311 | 1310nm 10dBm |
| 234305 | 1550nm 4dBm |
| 234811 | 1550nm 10dBm |

## Optical Splitter

| Part # | Output |
|--------|--------|
| 2337 | 2-Way |
| 2339 | 4-Way |
| 234401 | 8-Way |
| 234501 | 16-Way |
| 234601 | 32-Way |

# CABLING AND WIRING

## 500' White Bare Copper Speaker Wire

| Part # | Conductors |
|---|---|
| 162-WH-500 | 2, Red and Black |
| 164-WH-500 | 4, Red, Black, White, and Green |

- 16 gauge speaker wire
- CL3 rated
- Flexible outer jacket
- Comes in the strongest box in the industry
- Length: 500'
- 99.997% oxygen free copper
- Outer jacket color: white

## Cat5E Jumper Cables

| Lengths | | Colors |
|---|---|---|
| 1' | 14' | Blue |
| 1.5' | 25' | Green |
| 3' | 50' | Yellow |
| 5' | 75' | Red |
| 7' | 100' | White |
| 10' | 1000' | Black |

- Use for high speed internet, DSL/Cable modem, home networking and fast ethernet connections
- Connects a computer to a DSL/Cable modem, networking router, hub, or wall plate
- Snagless strain relief ends
- RJ45 male to male plug
- UL listed
- 100% tested and verified to meet EIA/TIA T568A/B standards

## AV Pro HDMI Extender Set
AC-EX70-UHD

- 70 meters (40 meters 4K)
- Single CAT5e/CAT6/6a/7

## HDMI High Speed CL3 Cable

| Part # | Length |
|---|---|
| PHDMIHS-01 | 1' |
| PHDMIHS-03 | 3' |
| PHDMIHS-06 | 6' |
| PHDMIHS-10 | 10' |
| PHDMIHS-12 | 12' |
| PHDMIHS-15 | 15' |
| PHDMIHS-35 | 35' |
| PHDMIHS-50 | 50' |

CL3 HDMI cables are based on a technology that provides the best data transmission possible. Professional grade HDMI cables are CL3 rated for in wall use. Fully shielded cables made with durable, gold plated connectors to provide the best performance.

## HDMI Over 1 Cat5E/6 180'
P60E

- Extends your HDTV display up to 196' away from your HDTV source using one (1) category 5E balun
- Supports high definition resolutions 1080p, 1080i, 720p, and standard video format
- Supports computer resolutions up to 1920x1200 (WUXGA), 12-bit color depth
- HDMI version 1.3 compliant
- H.D.C.P. (high-bandwidth digital content protection) compliant
- HDMI to DVI adapter (not included) can be used for installation
- Improves compensation for cable signal
- Includes (2) power supplies (5V DC): (1) for transmitter and (1) for receiver
- Not 3D compatible
- Video amplifier bandwidth: 2.25 Gbps
- Single link range: 1080p
- Input video signal: 0.5 - 1.0V p-p
- Input DDC signal: 5V p-p (TTL)
- Input/output connector type: HDMI (19 Pin - type A) female
- Link connector: RJ45 shielded
- Power consumption: 0.12 watts (max)
- Data speed transfer: 10.2Gbps
- Power supplies: (2) 5V DC
- Dimensions: 2" W x 1.88" H x 3.25" D

## RG6 CCS Single (1000ft., black)
S6SCCS3GBLK

- Boxed reel
- DISH approved
- UV inhibitor jacket
- Swept to 3.0 GHz
- 60% aluminum braid and 100% aluminum foil

## Dual White RG6 CCS with Messenger
S6DMCCS3GWHT

- CCS RG-6 dual coax, with 17AWG messenger wire attached, 500' reel-in-box
- This RG-6 coaxial cable is DISH Approved and swept to 3GHz
- It has 60% aluminum braid and 100% aluminum foil
- The center conductor is 18awg copper clad steel
- UV inhibitor jacket. UL and CL2 approved

## RCA Coupler: 100pc
RCA-RCA

## RG6 Compression F-Connector
SNS1P6

- One piece Snap-N-Seal design
- Fits RG-6 coax cable
- Qty: 50

## RG6/Quad Connector: Bag of 50
EX6XL

## 2.8 GB Barrels: 100pc
F81-2G

## EZ-RJ45 Cat6E
100010C

## 44+ YEARS
as an industry leading distribution company.

DISH approved cable, Coax and CL3 rated fire resistant HDMI cables.

### High-Speed HDMI 2.0 Cables

| Part # | Length |
|--------|--------|
| 115-003 | 3' |
| 115-006 | 6' |
| 115-012 | 12' |
| 115-025 | 25' |

### RG-6 Coaxial Cables

| Part # | Length |
|--------|--------|
| 135-006 | 6' |
| 135-012 | 12' |
| 135-025 | 25' |
| 135-050 | 50' |
| 135-100 | 100' |

# Pace Provides Custom "Grab And Go" Coax Solutions For Any Of Your Needs

## Need Coax?
## No Problem!

Our cable experts can provide you with Coax cables of any size.

## Keep all of your cables organized with our zip ties in a variety of different color and sizes!

We have zip ties available in multiple quantities and they come in black, white, clear, and red. Screw-mounted zip ties are also available.

# INSTALLATION TOOLS

## M18 Fuel™ Lithium-Ion 4-Tool Combo Kit
2694-24

Features a POWERSTATE™ brushless motor, REDLINK PLUS™ electronic intelligence and REDLITHIUM™ battery technology, this results in longer motor life, more run time and more power. The POWERSTATE™ brushless motor works harder and lives longer than all leading competitors, while reducing noise and cooling more rapidly to deliver years of maintenance-free performance. REDLINK PLUS™ intelligence hardware and software is the world's most advanced system of cordless power tool electronics that will maximize performance and protect the user's investment.
Includes:

- (1) M18 Fuel™ 1/2" Hammer drill/driver
- (1) M18 Fuel™ 1/4" Hex impact driver
- (1) M18 Fuel™ SAWZALL® reciprocating saw
- (1) M18™ LED work light
- (2) Extended capacity battery pack
- (1) M18™ and M12™ Multi-voltage charger
- (1) Belt clip
- (1) Contractor bag
- (1) Reciprocating blade

## 18V Wet/Dry Vaccuum
0880-20

- Works on all Milwaukee 18V slide-on batteries, REDLITHIUM® or NiCd
- Powerful motor to provide strong suction and air flow
- Tool box style for easy transport and storage
- On-board accessory and hose storage
- Built-in blower port
- Ideal for both wet and dry applications
- HEPA filter

## M12™ 3/8" Drill/Driver Kit
2407-22

- Delivers up to 275lbs of torque
- On-board battery fuel gauge displays remaining run time
- New ergonomic handle design for increased comfort
- Metal ratcheting chuck for maximum durability

Includes:

- (1) M12™ 3/8" Drill/driver
- (2) M12™ REDLITHIUM™ battery
- (1) M12™ Lithium-ion battery charger
- (1) Belt clip
- (1) Carrying case

## 3/8" 12V Cordless Right Angle Drill/Driver Kit
2415-21

## M18 Fuel™ 1/2" Hammer Drill/Drive Kit
2704-22

Lightweight, versatile hammer drill/driver offers up to 10X longer motor life, 2X more runtime and 25% more power for maximum performance on the jobsite. The POWERSTATE™ brushless motor outperforms all leading competitors with constant power output, yet runs cooler with no wearable components. The onboard fuel gauge helps you monitor the charge more accurately, so there's less downtime on the job. REDLINK PLUS™ intelligence ensures maximum performance and protection from overload, overheating and over-discharge.

The all-metal ratcheting locking chuck provides maximum grip, bit retention and durability. Features 31,450 BPM for fast hammer drilling through masonry. A new contoured soft grip gives you ultimate comfort during prolonged use. The kit includes the new multi-voltage charger, extended capacity battery pack, side handle, and carrying case.

## M-Spector 360™ Kit
2313-21

- Screen rotates providing the user fluid image control
- Optimized 2.7" LCD
- 9mm 640x480 Digital image sensor
- 4 Surround LED lights
- Aluminum head and improved flexibility deliver unmatched durability and pipe maneuverability
- Hook, magnet, and mirror attachments help to inspect and solve

## Milwaukee 120V 1/2" Drill
0235-21

- 5.5amp motor, 0—950rpm, trigger speed control with reversing
- Heavy-duty industrial single sleeve all metal keyless chuck and spindle lock
- 8' 3-wire Quik-Lok® cord with easy detachment for storage and service
- Exclusive brush cartridge system changes brushes in less than one minute

## Milwaukee Hole Hawg
1676-6-MWK

Setting the standard for large-hole drilling in tight spaces. The 1/2" Hole-Hawg® Drill delivers power and torque in a compact design that makes it perfect for drilling between studs and joists. The powerful motor features two speed ranges plus reverse for increased versatility. The drill offers a 4-5/8" self-feed bit capacity and an extra long pipe handle to help you control power. The kit includes a durable carrying case.

## 18V High Capacity Li-Ion Battery 2-Pack
48-11-1822

## 12pc Milwaukee SAWZALL® Blade Set
49-22-1129

## 120V Reciprocating Saw
6536-21

The new Milwaukee orbital super SAWZALL® reciprocating saw has a high powered 13amp Milwaukee built motor for fast orbital cutting action. The variable speed trigger provides 0 to 3000 strokes per minute with a 1-1/4" stroke. Counter balanced for smoother operation with less vibration. A gear protecting clutch allows the saw to withstand impacts, lengthening the life of the tool. The Quik-Lok® blade clamp provides fast and easy blade changes, and an impact resistant carrying case provides room to store a variety of accessories.

## M18™ Hackzall® Reciprocating Saw Kit
2625-21

- One-handed design provides superior control and versatility over a standard reciprocating saw
- Compact size allows for cutting in tight spaces, and light weight makes overhead work easier
- Quik-Lok® blade clamp offers fast, easy tool free blade changes for SAWZALL® blades and HACKZALL® blades
- Built-In LED light illuminates the work surface while cutting
- Compatible with M18™ XC high capacity REDLITHIUM™ batteries and M18™ compact REDLITHIUM™ batteries

## 12v Cordless Reciprocating Saw
2420-20

- Only 11" and 2.6lbs. for cutting in tight spaces
- Keyless Quik-Lok® blade clamp allows for quick and easy blade changes
- All-metal gear case for added durability
- Variable speed trigger for increased user control
- Battery fuel gauge displays remaining run-time
- Accepts both HACKZALL® and SAWZALL® style blades
- Built-in LED light illuminates work surface

## Paddle Bits

| Part # | Size |
| --- | --- |
| 48-27-0170 | 3/8" x 16" |
| 48-27-0175 | 1/2" x 16" |
| 48-27-0180 | 5/8" x 16" |
| 48-27-0185 | 3/4" x 16" |
| 48-27-0195 | 1" x 16" |

## Auger Bits

| Part # | Size |
| --- | --- |
| 48-13-5540 | 1/2" x 18" |
| 48-13-5750 | 3/4" x 18" |
| 48-13-6000 | 1" x 18" |
| 48-13-5620 | 5/8" x 28" |

## Milwaukee 12" Bit Extension
28960

## WE CARRY ALL THE MAJOR BRANDS

- DeWalt, Milwaukee, Bosch, Makita, Stanley, Festool and Many More
- Custom Installation Vehicle Kits For Fleets
- Same Day Shipping
- Online Order Tracking

## DeWalt 20V Max Drill and Impact Driver Kit
DCK280C2

- DCD780 20V MAX 1/2" drill/driver features two speed transmission (0-600 / 0-2,000)
- DCF885 20V MAX 1/4" impact driver features 3 LED lights with 20 second delay to provide visibility without shadows
- Compact, lightweight design fits into tight areas
- Includes 2 20V MAX* Lithium Ion 1.5 Ah battery packs
- Batteries power-up from 0-100% in 30 minutes
- Smart charging system gives more life from every battery

## DeWalt 20V Max Drill Driver
DCD780C2

- Compact, lightweight design fits into tight areas
- High speed transmission delivers 2 speeds (0-600 and 0-2,000 rpm) for a range of fastening and drilling applications
- Ergonomic handle delivers comfort and control
- Heavy-duty 1/2" ratcheting chuck provides superior bit gripping strength
- Includes: DCD780 1/2" Drill Driver, (2) 20V Max* lithium ion battery packs, 30 Minute Fast charger, Belt hook, On-board bit holder, and Kitbox

## DeWalt 20V Max Compact Drill Driver Kit
DCD771C2

- Compact, lightweight design fits into tight areas
- High performance motor delivers 300 unit watts out (UWO) of power ability completing a wide range of applications
- High speed transmission delivers 2 speeds (0-450 & 1,500 rpm) for a range of fastening and drilling applications
- 1/2" single sleeve ratcheting chuck provides tight bit gripping strength
- Ergonomic handle delivers comfort and control
- Includes 2 20V MAX* Lithium Ion 1.5 Ah battery packs
- Batteries power-up from 0-100% in 30 minutes
- Smart charging system gives more life from every battery

## DeWalt 17pc Bit Set
DW1167H5

- Black oxide finish for greater wear resistance
- Tough plastic case
- Set includes 17 black oxide drill bits ranging from 1/16 - 1/2"
- 135 degree split-point design reduces walking when starting bit

## DeWalt Corded/Cordless Vacuum
DCV581H

- Cordless or corded operation powered by either an 18v or 20v MAX battery - or an AC outlet
- HEPA rated wet/dry filter traps dust with 99.97% efficiency at 1 micron
- Heavy-duty, crush-resistant, fully-integrated 5' (by 1-1/4" diameter) hose provides durability, flexibility and ease-of-use.
- On-board hose, cord and accessory storage makes the vacuum easy to carry/transport
- 2-Gallon tank capacity provides enough storage to empty a toilet or clogged pipe

## 8pc Spade Bit Set
341008-T

- Rugged plastic rubber carrying case
- Hex end fits rapid change drill attachments
- Hex end provides tight fit for drill
- Bit sizes: 3/8", 1/2", 5/8", 3/4", 7/8", 1". 1-1/8", and 1-1/2"
- Case Size: 5-1/2" X 7-1/2"

## 6" Bit Extension
DW1588

- Quick change mechanism allows for quick and easy accessory changes
- Compact industrial design is best for tight, hard to reach applications
- Contoured finger grip for easy one-handed release

## 1/4" x 54" Flex Bit Extension
FIBEX1454

- For extending flex bits when drilling within a wall
- For 3/4" bits

## 7/16" Combination Wrench
25763

## 1/2" Box and Open End Wrench
BOOW12

## 9pc Hole Saw Kit
244002

Kit Includes:
- 7/8" (22mm) Bi-Metal Hole Saw
- 1-1/8" (29mm) Bi-Metal Hole Saw
- 1-3/8" (35mm) Bi-Metal Hole Saw
- 1-3/4" (45mm) Bi-Metal Hole Saw
- 2" (51mm) Bi-Metal Hole Saw
- 2-1/2" (64mm) Bi-Metal Hole Saw
- 1/4" Mandrel (9/16" to 1-3/16")
- 7/16" Quick Change Mandrel
- Mandrel Adapter

## Klein Cable Cutter
J63050

- High-leverage for greater cutting power
- Precision, one-hand shearing action
- Cuts up to 4/0 aluminum AWG (no ACSR), 2/0 AWG soft copper and 100-pair 24 AWG communications cable

## 7" Diagonal/Side Cutter
244005

- 7 inch side cutter
- Comfortable, durable rubber handle
- Handle designed for high leverage
- Precision molded for a clean cut

## F Removal Tool
2206-F

- 7/16" hex socket for mating and un-mating
- This dual function tool features a 7/16" hex socket at one end and 3/8-32 thread at the other end
- The hex socket slides over cable and rear of the connector for easy mating and un-mating of hard to grasp "F" connectors

## Adjustable Punch Down Tool
13006

- The primary tool for all telecom and data communications installers
- Spring loaded for fast low effort wire seating and termination
- Bayonet style blade retention mechanism is compatible with tools and blades manufactured by Harris, Ideal, and others
- Adjustable low and high impact force settings
- Spare blade storage compartment in the handle

## Security Sleeve Tool
TW-SC

- Use to tighten or loosen "F" connectors
- 7/16" security sleeve tool

### B.E.S. Fish Chain and Retriever
FIB223

‣ Flexible fish tool bends in any direction and holds its shape
‣ Use the 10' chain and magnetic retriever to fish wires in uninsulated walls
‣ Metal ring attached to end of ring to keep chain from falling in walls
‣ Flex tool: 18"

### B.E.S. Glow Fish II Kit
GLF407

‣ Five 6' rods for fishing wire in attics, walls, ceilings and other hard to reach places
‣ Packed in clear carry case

Kit Contains

‣ 5 - 6', 5/32" diameter luminous rods with metal end
‣ 1 - 6' rod has rounded metal ends and can connect together for a total length of 30'

### B.E.S. Installation Kit
BBCON 300 KIT

Kit Contains

‣ Carrying case 3' bullnose rod, fish chain and retriever, attachment kit, wisp head, glowfish set, repair kit, 15' telescoping pole w/ Z-tip, 36" wire bits, 3 high speed steel flex bits, 3/16" x 72" extension, 3 true point bits, flex bit guide, and I60 stud finder

### Auger Bits

| Part # | Size |
|---|---|
| QTT3872 | 3/8" x 72" |
| AUG3472 | 3/4" x 72" |

‣ Flexible shaft allows you to drill around corners or at an angle without reducing leverage
‣ Screw tip on the end enables the bit to be pulled vigorously through wood
‣ Cross-bored at both ends for easy wire pulling

### Long Flexible Auger Bits

| Part # | Size |
|---|---|
| 06-03-54A | 3/8" x 54" |
| 12-04-54A | 3/4" x 54" |

‣ Wood-type auger bit with screw point
‣ Pulls itself through wood, avoids walking or skidding
‣ Excellent for drilling in soft woods or through thin sections
‣ Slow back-taper allows for easy retrieval
‣ Bends to meet your needs

### Electrical Tape
CH-TAPE

### 100 pk Toggler Screws with Bolt Set
374499

‣ Industries strongest, most compact toggle system
‣ Allows removal of bolt or fixture without anchor falling behind the wall

### Single Gang Low Voltage Mounting Bracket
MB1

For walls 1/4 inch to 1 inch thick

### Dual Gang Low Voltage Mounting Bracket
MB2

For walls 1/4 inch to 1 inch thick

### In-Wall USB Power Outlet
120900X

‣ HDMI female jack (19 pin)
‣ Includes a trim plate and color matching mounting screws
‣ Color: White

### 3 GHz F Wall Plate
WP-1F-WH

‣ Single white "F" connector wall plate
‣ Single gang standard outlet size
‣ 3GHz barrel style "F" connector
‣ Color: White

### 1 Gang Wireport Wallplate
1GWH, 1GAL, 1GBK, 1GIV, 1GLA

‣ Designed to mount directly to standard low voltage mounting brackets and backless boxes
‣ Wireport™ plates are perfect for both wall and ceiling installations for audio, video, security, and office networking
‣ Hole size 1.56" (Diameter)
‣ Hole area 1.92" (Sq. In.)

### Little Giant Wallplate Transmitter
AC-EX100WPP-T

‣ HDMI 2.0 & VGA auto sensing inputs
‣ 4K 30 4:4:4, 4K60 4:2:0, HDR 4:2:2
‣ Up to 100m on 1080p, up to 70m on 4K
‣ Easy to install
‣ Compatible with HDBaseT displays, projectors, and AVR's

## 10-18 AWG Wire Stripper
11045

‣ Hardened steel with precision ground stripping holes

‣ Spring-loaded action for self-opening

‣ Precision-ground stripping holes for easy removal of insulation

‣ Easy-to-read wire gauge markings on both sides for stripping in either direction

‣ Wire looping and bending holes

## Automatic Wire Stripper
370371

‣ Cuts stripping 10-26 AWG soft copper

‣ Crimps insulated and uninsulated solderless terminals

‣ Heat treated steel

‣ Length: 8-1/4"

‣ Molded rubber handles

## Klein Tools 26X16G Wire Stripper
11046

‣ Textured handles provide a firm, comfortable grip

‣ Spring-loaded action for self-opening

‣ Precision-ground stripping holes for easy removal of insulation

‣ Easy-to-read wire gauge markings on both sides for stripping in either direction

SDT-11-250

SDT596-250

## Cable Strippers

| Part # | Compatibility |
| --- | --- |
| SDT-11-250 | RG11 |
| SDT596-250 | RG59/6 Quad |

‣ One step cable preparation precisely exposes the center conductor and removes the proper length of jacket to SCTE and Bellcore specifications

‣ No adjustments or extra tools required

‣ Replaceable blade cassettes are color coded and marked with cable series type and braid preparation dimensions for easy identification

## RG59/6 SNS Stripper and Compression Tool
IT-1000

‣ All-in-one tool allows you to prepare coaxial cable and install any RG6 or RG59 Snap-N-Seal compression connector

‣ Comfortable, compact design

## Coax Stripper RG6/RG59
CS-596

‣ Designed for easy, one-step cable stripping

‣ Contractor-grade stripping tool has an adjustable blade that adapts to different cable sizes

## CAT5E Cable Stripper
15015

‣ Economical tool  specifically designed to strip the cable jackets from category 5, 6, and 7 type twisted pair cables

‣ No adjustments are required and will not nick the inner conductors

## Wire Stripper/Cutter 10-24AWG
WS-1024

‣ Strips and cuts several different types of wire and cable

‣ Self-adjusting mechanism according to wire size provides excellent wire stripping without damaging the conductor

‣ Adjustable stop for consistency in wire strip lengths

‣ Replaceable blade system

## Light Duty 8" Crimper
3258597

- Crimp insulated or non-insulated terminals
- Fastens non-insulated connectors through number 8 gauge
- Cushioned high leverage insulated grips
- Cuts copper and aluminum wire

## Coax Compression Tool
CAT-AS-EX

- Allows assembly of series 59/6, 7 and 11 drop connectors in one versatile tool
- Works on PPC EX series connectors
- Two sets of jaws, precision designed

## RG 59 & 6 SNS Compression Tool
SNSUTL

- Works with RG59 and RG6 compression connectors from just about any brand
- Adjustable stroke length to accommodate different length connectors

## SealSmart II Compression Tool
16220

The SealSmart II Compression Tool utilizes a universal head design that will work with all standard compression connectors available on the market, including right angle and RGB mini

## EZ-RJ45 Crimp Tool
100004

- Crimps and trims extended wire in EZ-RJ45® connector in a single cycle
- The ratcheted straight action crimping motion ensures a uniform crimp every cycle
- Features precision cast crimping dies for superior accuracy
- Built in wire cutter and stripper for silver satin
- All steel frame with rust resistant black oxide finish
- For use with EZ-RJ45® cat 5/5e & cat 6 connectors
- Will also work on most other RJ-11, RJ-12 and RJ-45 connectors (except AMP)

## EZ RJ45 Heavy Duth Crimper, Stripper, and Cutter
10054C

- Crimps and trims extended wire in EZ-RJ45® connector in a single cycle
- The ratcheted straight action crimping motion ensures a uniform crimp every cycle
- Features precision cast crimping dies for superior accuracy
- Built in wire cutter and stripper for silver satin
- All steel frame with rust resistant black oxide finish

## Connector Pressing Telcom Pliers
12100

- These quality pliers are designed to crimp UG, UR, UB and UY style connectors manufactured by 3M and others
- Pliers are designed and manufactured in accordance with Bell Specifications
- Built-in side-cutter and coil spring
- The built-in stop prevents damage to connectors

## RJ45 Crimp Tool
TCRJ45T

- Cuts, strips and crimps RJ45 modular connectors

## Cable Pro Trap Wrench
TWC716

- Fits all standard traps
- Fits all sizes of security sleeves
- Anodized blue for easy identification
- Security socket is made of hardened steel for longer life

## RG59 and 6 Snap-N-Seal Compression Tool
CPLCCT-1

- Effortless, one step operation
- Fits comfortably in the palm of your hand
- No adjustments required

## Compression Crimping Tool
16201

- The SealSmart compression crimp tool provides simple, fast and reliable terminations
- The perfect solution for CATV, DSS, security and residential structured wiring installations
- Connector adapters are included for F, RCA and BNC SealSmart connectors and mount in handle for easy storage

## Klein Crimper
1005

- Crimping die marked for insulated and non-insulated solderless terminals and connector

## Fox 2 & Hound 3: Wire Tracing Kit
3399-K

Quick and easy way to trace wires and cables of all kinds including: electrical wire, twisted pair wire, LAN cable, coax cable, multi-conductor cable, telephone cable, speaker wire, alarm cable, and many more!

## Fluke Networks® Analog Tone Generator
3274

▸ SmartTone technology
▸ Send tone signal up to 10 miles on most cables
▸ Line cord features angled bed-of-nails clips and ruggedized RJ-11 plug for direct access to phone and data jacks without adapters
▸ External switch allows selection of solid or alternating tone options, indicated with solid or flashing LEDs
▸ Line polarity confirmation

## VDV MapMaster 2.0 Kit
T129K1

Includes:
▸ VDV MapMaster 2.0 with detachable Master Remote
▸ RJ45 #1-12 Remote ID Set (ID Mapping only)
▸ Coax F #1-8 Remote ID Set (ID Mapping only)
▸ RJ45 Port Saver
▸ RJ45 to Alligator Clips Cable
▸ No-Fault Cable
▸ F Female to F Female Adapter
▸ BNC Female to F Female Adapter
▸ BNC Female to F Male Adapter

## Tstak Deep Box
DWST17806

▸ Flexible platform allows different combinations
▸ Built in bi-material handle for easy and stable portability
▸ 6 gallon capacity
▸ Removable tray for quick access to tools
▸ Extra large volume for high tools storage

## Open Top Tool Carrier
L238

▸ LED light handle can be easily directed at work area or into tool carrier to help identify tools and parts
▸ Powered by two AAA batteries, included
▸ 3 levels of light output allow adjustment for wide area illumination or close-up work
▸ Ergonomic handle design helps reduce stress on hand and wrist
▸ Large open compartment provides easy access to power tools and accessories
▸ 47 multi-use pockets and 10 webbing loops to help organize your favorite hand tools
▸ Padded, adjustable shoulder strap for easy carrying

## Digital Multimeter
BBT858L

The BBT858L is perfect for all of your low voltage electronics and single phase AC electrical testing. Use on a broad variety of equipment including electronic and electrical components, devices, fuses, alarms and circuit boards. Measure ohms, amps, and volts (AC and DC) and temperature. It is designed for indoor/outdoor use and is easy to read with its large backlighted LCD display. Power is supplied by a 9V battery with 150-200 hours of life.

## Tstak II - Flat Top
DWST17807

▸ Flexible platform allows different combinations
▸ Bi-material handle on top of each unit
▸ 3.5 gallon capacity

## Tstak Mobile Storage Deep Box On Wheels
DWST17820

▸ Maximum storage volume
▸ Bi-material top handle for convenient carrying
▸ Anti-rust metal latches
▸ Durable 7" wheels

## 36 Pocket Tool Bag
1550CLC

▸ 16" x 10 1/2" x 4" removable top plastic tray for easy access to bag contents
▸ 13 Multi-use pockets inside and 23 outside to organize tools and accessories
▸ Zippered security pocket
▸ Pocket for drill bits or tips
▸ Electrical tape strap

## Pocket Toner
RPT

▸ Identify unlabeled coax very quickly
▸ LED indicates DC shorts, splitters, and other self-grounding devices in cable
▸ Checks circuit integrity in new and/or installed cable