OAK PARK UNIFIED SCHOOL DISTRICT
5801 E. CONIFER STREET
OAK PARK, CALIFORNIA 91377
(818) 735-3206

NOTICE OF SPECIAL BOARD MEETING- AGENDA #896

Written notice is hereby given in accordance with Education Code Section 54957 that a special Board Meeting of the Board of Education of Oak Park Unified School District will be held:

DATE:	Tuesday, June 24, 2014
TIME:	4:00 p.m. Open Session
PLACE:	Oak Park Unified School District Conference Room 5801 E. Conifer Street Oak Park, CA 91377

Call to Order _____
Pledge of Allegiance
Roll Call
Public Comments

ACTION

1. **Deliberate and Approve Provisional Board Member Appointment**
   Board will deliberate their interview results and nominate and approve appointment of a provisional Board Member
2. **Approve Final Lease-Lease Back Agreement for Project 14-25R, Classroom Replacement Project at Oak Park High School**
   Board policy 3312 requires Board approval for contracts for services
3. **Approve Contract for Project 14-19R, District-wide Upgrade of Bell and Public Address Systems**
   Board policy 3312 requires Board approval for contracts for services
4. **Approve Power Efficiency Agreement for Installation of EV Charging and Storage System**
   Board policy 3312 requires Board approval for contracts for services
5. **Approve Technology Map Progress Report and Authorization to Proceed with Summer 2014 Projects 1.**
   Board policy 3312 requires Board approval for contracts for services

Date: June 20, 2014

Anthony W. Knight, Ed.D.
Superintendent and Secretary to the
Board of Education

TO: **BOARD OF EDUCATION**

FROM: **DR. ANTHONY W. KNIGHT, SUPERINTENDENT**

DATE: **JUNE 23, 2014**

SUBJECT: **1. DELIBERATE AND APPROVE APPOINTMENT OF PROVISIONAL SCHOOL BOARD MEMBER**

ACTION

ISSUE: Shall the Board of Education approve Appointment of Provisional School Board Member?

On nomination of _____, seconded by _____, approve the nomination and election of _____ as the Provisional Member of the Board of Education.

VOTE:	**AYES**	**NOES**	**ABSTAIN**	**ABSENT**
Laifman	____	____	____	____
Pallant	____	____	____	____
Rosen	____	____	____	____
Student Rep.	____	____	____	____

Respectfully submitted,

_____
Anthony W. Knight, Ed.D.
Superintendent

TO: **MEMBERS, BOARD OF EDUCATION**

FROM: **DR. ANTHONY W. KNIGHT, SUPERINTENDENT**

DATE: **JUNE 24, 2014**

SUBJECT: **2. APPROVE FINAL LEASE-LEASE BACK AGREEMENT FOR PROJECT 14-25R, CLASSROOM REPLACEMENT PROJECT AT OAK PARK HIGH SCHOOL**

ACTION

ISSUE: Shall the Board of Education approve the final lease-lease back agreement with Balfour Beatty Construction, Inc. for Project 14-25R, Classroom Replacement Project at Oak Park High School?

BACKGROUND: At its meeting on March 25, 2014, the Board approved an interim lease-lease back agreement with Balfour Beatty Construction, Inc. (BBC) for Project 14-25R, Classroom Replacement Project at Oak Park High School the Measure R Master Plan 2014 Update, pending finalization of the guaranteed maximum price (GMP). At this evening's meeting, the Board is asked to approve Amendment 1 which finalizes lease-lease back agreement with BBC specifying the GMP. Details of the final agreement were being completed as this agenda was going to press, which will be forwarded to the Board in advance of this evening's meeting.

ALTERNATIVES:

1. Approve the final lease-lease back agreement with Balfour Beatty Construction, Inc., for Project 14-25R, Classroom Replacement Project at Oak Park High School as recommended
2. Do not approve the final lease-lease back agreement.

RECOMMENDATION: Alternative No. 1

Prepared by: Martin Klauss, Assistant Superintendent, Business and Administrative Services

Respectfully submitted:

_____
Anthony W. Knight, Ed.D.
Superintendent

Board Action: On motion of _____, seconded by _____, the Board of Education:

VOTE:	AYES	NOES	ABSTAIN	ABSENT
Laifman				
Pallant				
Rosen				
Yeoh				

TO: **MEMBERS, BOARD OF EDUCATION**

FROM: **DR. ANTHONY W. KNIGHT, SUPERINTENDENT**

DATE: **JUNE 24, 2014**

SUBJECT: **3. APPROVE AWARD OF CONTRACT FOR PROJECT 14-19R, DISTRICT-WIDE UPGRADE OF BELL AND PUBLIC ADDRESS SYSTEMS**

ACTION

ISSUE: Shall the Board of Education approve the award of a contract for Project 14-19R, District-Wide Upgrade of Bell and Public Address Systems?

BACKGROUND: In its approval of the Facility Master Plan in January 2014, the Board authorized Project 14-19R, District-Wide Upgrade of Bell and Public Address Systems, with direct construction budgeted at $165,000. During the spring of the current school year, staff met with several vendors regarding potential replacement systems, finally settling on the Rauland Borg system proposed by Pacific Coast Sound and Communications (PacifiCom) of Camarillo, California, as the most cost effective solution. The proposal received from PacifiCom, in the amount of $81,714.00, includes hardware, installation, 1-year warranty for parts and labor and 5-year warranty for equipment. A full copy of Pacificom's proposal is attached for the Board's information.

After review by staff, it is recommended that the Board award a contract to PacifiCom, contingent upon the vendor providing to the District a payment bond issued at 50% of the contract amount as required by law.

ALTERNATIVES:

1. Approve the award of a contract for Project 14-19R, District-Wide Upgrade of Bell and Public Address Systems to Pacific Coast Sound and Communications (PacifiCom), in the amount of $81,714.00, plus the cost of the required 50% payment bond.
2. Do not approve the award of contract for Project 14-19R.

RECOMMENDATION: Alternative No. 1

Prepared by: Julie Suarez, Director, Business Operations
Martin Klauss, Assistant Superintendent, Business and Administrative Services

Respectfully submitted:

_____
Anthony W. Knight, Ed.D.
Superintendent

Board Action: On motion of _____, seconded by _____, the Board of Education:

VOTE:	AYES	NOES	ABSTAIN	ABSENT
Laifman				
Pallant				
Rosen				
Yeoh				

PacifiCom

Pacific Coast Sound and Communications
330 N. Wood Road, Suite L • Camarillo, CA 93010
(805) 987-1351 • (805) 647-2823 • Fax (805) 987-1353
www.pacificomusa.com • License #529914 (C7/C10)

May 27, 2014

TO: Julie Suarez
Oak Park School District

QUOTE: 94924

PROJECT: Rauland Borg Telecenter Campus District Wide Paging and Bell System

We propose to provide and install a Rauland Borg Telecenter campus district wide paging and bell system. Announcements, prerecorded messages and tones can be sent to all or selected schools. Live pages can be made from the telephone or administrators USB microphone. Tones and prerecorded messages can be initiated from web page on administrators computer, Ipad or Smart phone. Passwords prevent unauthorized system access. An emergency button will be installed in each school office which can initiated a sequence of events including sending of events including sending email, text messages, sounding tones or playing prerecorded messages.

Bell schedules are created and administered from an intuitive web page calendar. Schedules can be managed at each school or at the district office.

We propose to install a campus controller at each school and enterprise system software on a district provided server. We will connect the controller to the existing intercom systems using input/output modules. We will turn off existing master clocks since the bell schedules will now be controlled by the Telecenter Campus System. The existing intercom systems will still function as before.

We will add outside speakers and replace damaged underground cabling as shown on the attached summary. Our price includes equipment cabling, software, installation labor, programming, testing, training, documentation and sales tax. Parts and labor are warranted for one year. Rauland Borg equipment is manufacturer warranted for 5 years.

Thank you,

Paul Vacca

Attachments: Bill of materials, proposal and specification sheets.

PacifiCom

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OAKPARK SCHOOL DISTRICT
RAULAND TELECENTER CAMPUS
5/27/2014

		MATERIALS	LABOR	SALES TAX	SITE TOTAL
OAKPARK HIGH SCHOOL					
TC CAMPUS CONTROLLER & SYSTEM TIE-IN		$6,400	$2,030	$480	$8,910
REPLACE C BLDG UNDERGROUND		$1,280	$2,240	$96	$3,616
ADD IP SPEAKER FIELD HOUSE		$440	$280	$33	$753
MEDEA CREEK SCHOOL					
TC CAMPUS CONTROLLER & SYSTEM TIE-IN		$6,400	$2,030	$480	$8,910
REPLACE 2 STORY BLDG UNDERGROUND		$980	$1,680	$74	$2,734
REPLACE R BLDG UNDERGROUND		$350	$560	$26	$936
ADD EXTERIOR HORN R4		$190	$140	$14	$344
BROOKSIDE SCHOOL					
TC CAMPUS CONTROLLER & SYSTEM TIE-IN		$6,400	$2,030	$480	$8,910
ADD 4 EXTERIOR HORNS		$860	$700	$65	$1,625
REDOAK SCHOOL					
TC CAMPUS CONTROLLER & SYSTEM TIE-IN		$6,400	$2,030	$480	$8,910
ADD EXTERIOR HORN D BLDG		$190	$140	$14	$344
OAK HILLS SCHOOL					
TC CAMPUS CONTROLLER & SYSTEM TIE-IN		$6,400	$2,030	$480	$8,910
ADD SPEAKERS ROOM 16-24		$1,200	$3,920	$90	$5,210
OAK IND STUDY/OAKVIEW CHOOL					
TC CAMPUS CONTROLLER		$3,200	$560	$240	$4,000
CONNECT IND STUDY SPEAKERS		$750	$450	$56	$1,256
ADD INPUT MODULE OAKVIEW		$480	$280	$36	$796
DISTRICT OFFICE					
TC CAMPUS ENTERPRISE SOFTWARE		$8,800	$6,090	$660	$15,550
	TOTALS	**$50,720**	**$27,190**	**$3,804**	**$81,714**

PacifiCom

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PROJECT: OAKPARK TC CAMPUS

BILL OF MATERIALS **05/27/2014**

MATERIALS			
QTY.	**MANUFACTURER**	**MODEL**	**DESCRIPTION**
1	RAULAND	TCU2000SW	DISTRICT SOFTWARE
6	RAULAND	TCC2000	TELECENTER CAMPUS CONTROLLER
1	RAULAND	TCC2011	IP MODULE
12	RAULAND	TCC2022	ZONE PAGE MODULE
20	RAULAND	TCC2033	IN/OUT MODULE
6	RAULAND	TCC2099	RACK MOUNT
1	PATTON	4522	SIP TO ANALOG GATEWAY
50	BELDEN	C501106004	PATCH CORDS FT CAT 5E
5	NETGEAR	GS110TP	RACK POE SWITCH
5	PCSC	NONE	REWIRE EXISTING SPEAKERS
6	RAULAND	2305CS	PUSH BUTTON
1	STEWART	CVA25-1	POWER AMPLIFIER
2	RAULAND	MPA250	POWER AMPLIFIER
6	ATLAS	APF-15T	OUTSIDE HORN
6	ATLAS	VP151-APF	VANDAL PROOF BAFFLE
6	ATLAS	LP20-211	HORN BACKBOX
11	RAULAND	ACC1100	BACKBOX
11	RAULAND	ACC1401	SPEAKER BAFFLE
11	RAULAND	ACC1104	TBAR SUPPORT
6	WEST PENN	AQ355	OSP INTERCOM CABLE
1	SUPERIOR ESSEX	09-065-02	OSP 50 PR CABLE
1	WEST PENN	25355	INSIDE INTERCOM CABLE

Telecenter U by Rauland

Connect Your Universe

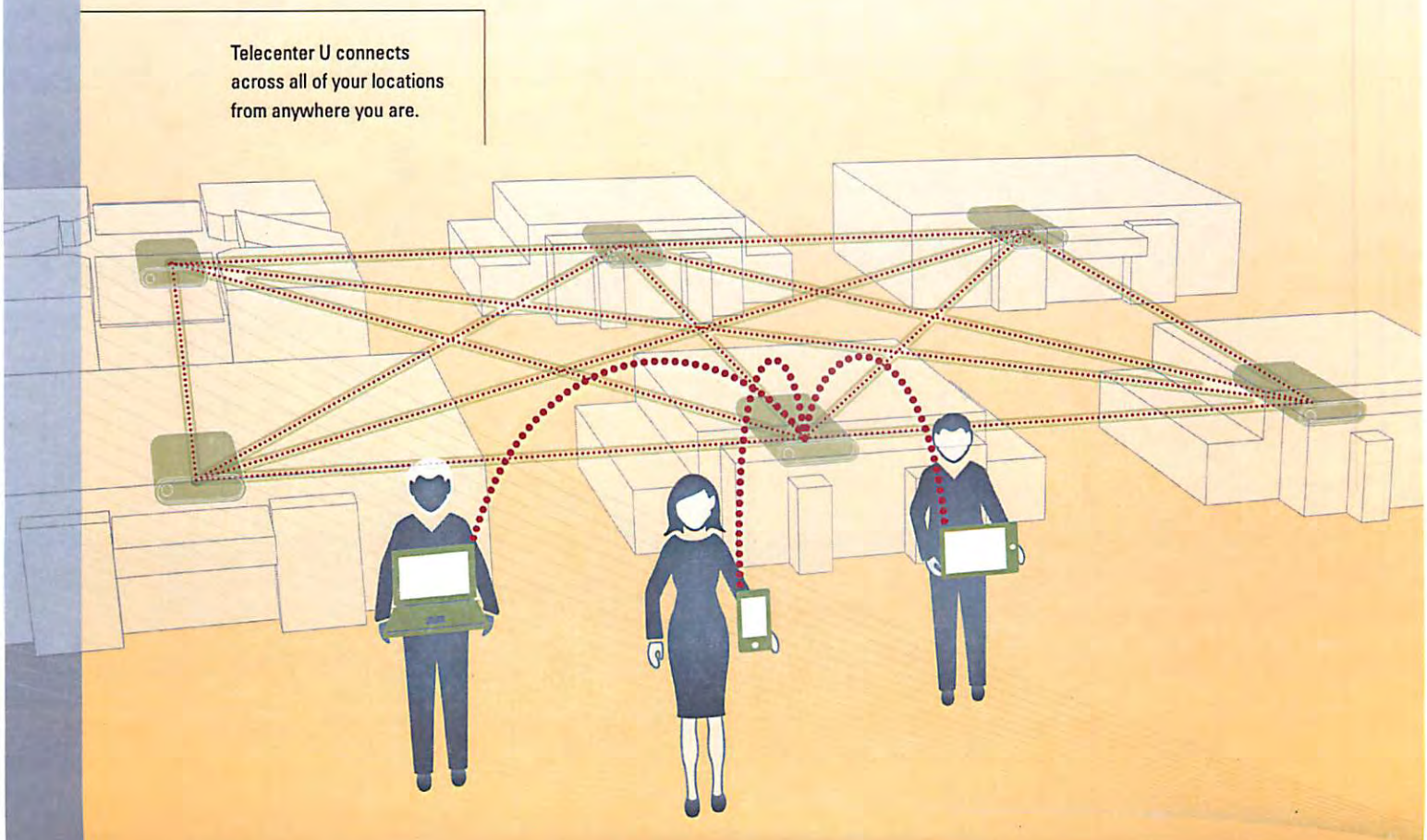
The complete solution for emergencies, events and everyday

Rauland

District-wide. Campus. Classroom.

Telecenter U connects all of your facilities and provides a complete solution for internal communications with:

- Live on-the-fly paging, district-wide and school by school
- Emergency notification and management
- Front office to classroom intercom communications
- Web-based scheduling for bells and more
- Classroom sound reinforcement



Many communication technologies united by a single system — that's the advantage Rauland-Borg's Telecenter U brings to your educational environment.

Everywhere Connections

Telecenter U takes advantage of your district's data network to connect all of your facilities together, allowing communication to flow to and from the right people and places and delivering a seamless, unified solution. Telecenter U also directly links to an integrated IP-based internal communications solution for school-based intercom and paging, as well as interfacing with clock systems, security and access systems, and other public address solutions.

Telecenter U leverages your investment in your existing IT infrastructure by tying together systems you have in place today, whether or not they're made by Rauland-Borg. All communication functions are easily accessible from any device with a web browser.

No one knows the educational environment as well as we do or can deliver a more complete solution for your school or district. Telecenter U by Rauland-Borg is the smartest way to connect your entire educational universe.

EMERGENCIES

SCHEDULING

COMMUNICATIONS

Telecenter U by Rauland

EMERGENCIES

Emergencies
Smart Response

How well your school responds during an emergency hinges in part on your crisis management strategy. Telecenter helps you take a proactive approach by letting you pre-record messages that provide instructions for different crisis scenarios.

Whether you're facing a lock out, lockdown, evacuation, weather emergency or any other situation that demands a rapid response, Telecenter systems enable you to take action quickly and confidently.

SCHEDULING

Event Management
Smart Schedules

Students, teachers, staff and parents depend on schedules for a smooth school day, and Telecenter U makes managing those schedules virtually effortless.

Telecenter systems make time management easy, from ringing bells to synchronizing clocks. Manage every schedule for every school from anywhere on your network.

COMMUNICATIONS

Everyday Communication
Smart Days

With Telecenter U, live communication is simple and targeted; it's a solution that can be used all day, every day. Just login on any PC with a web browser within your school, and you're ready to communicate to a single location, a group of facilities or your entire district.

Critical Notifications for a Wide Range of Emergencies

- District-wide notifications from a single web-based interface
- Emergency check-in notifies staff which classrooms haven't locked down
- Initiate recorded instructions, emergency tones, emails and more to your entire facility with a single touch
- Calls from classrooms keep annunciating until they are answered

Emergency sequences triggered from a phone, web browser or panic button allow for an immediate customized response.

Manage Any Event

- Class change tones
- Pre-recorded messages
- Playing of music in hallways before and after school and during passing periods
- Holidays, snow days and other school closings
- Adapted schedules (half-day, assemblies, etc.)
- Daylight saving time

Bells and clocks both synchronized to your network time. Calendar and schedules easily managed, school by school or centrally, from an easy web browser interface.

Communicate Daily Operations Messages

- Morning announcements and after hours messaging
- Manage multi-school campuses with ease
- Route internal communications to the right people
- Classroom call buttons allow teachers to get assistance without disturbing teaching

Fully integrated system with paging, intercom, bells, clocks and classroom sound keeping every day running smoothly.

Your Entire Universe

One Network Solution

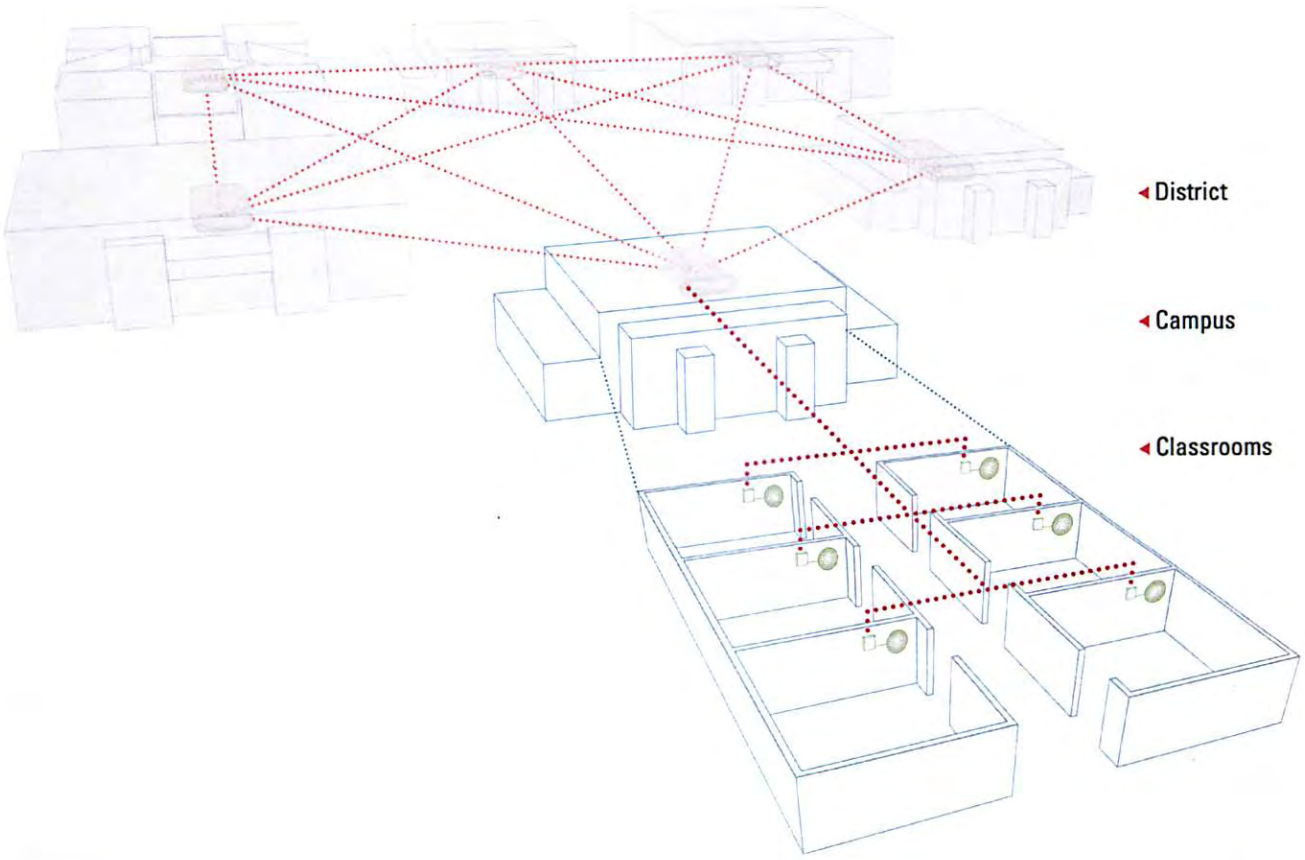
From your district office to each and every classroom, your facilities benefit from a network-based platform design when you connect your universe with Telecenter U — while keeping the specific needs of your schools in mind.

Telecenter U works with your data network, providing a seamless communication solution for every school and every system in your district — from IP addressable speakers in classrooms to a web-based user interface.

Telecenter Solutions provide:

- IP-based intercom and paging
- District-wide emergency notification
- Synchronized time-keeping systems
- Classroom sound reinforcement

Utilize your data network to bring communications district-wide, right to the classroom.



Telecenter U
by Rosuland

The Leader In School Communication

For more than 80 years, Rauland-Borg has been dedicated to the communication needs of schools just like yours — which is why you will find our communication solutions in more schools than any other brand. Our products are backed by a five-year manufacturer's warranty — our guarantee to you of system quality, performance and reliability that Rauland-Borg customers have come to expect.

Service, installation and support is delivered 24x7 through our network of certified distributors, with support from a team of on-staff Rauland engineers.

Rauland-Borg Corporation

USA 800.752.7725
Fax 800.217.0977

Canada 905.607.2335
Fax 905.607.3554

www.rauland.com

Telecenter U®

Model: TCC2000 — Telecenter U Campus Controller

TCC2000 Telecenter U Campus Controller

Features

- Master Controller For All Telecenter U Devices In a School
- Connects To External Phone Systems Through a SIP Gateway
- Interfaces To Telecenter U District Server For District-wide Capabilities
- Local Survivability For Emergency Functions Without Connection To District Server
- Status And Configuration Indicators To Simplify Installation And Operation
- Compatible With High Performance 1000Base-T Networks
- Supports Up To 500 Classroom Speaker Modules Per School
- Digital Encryption Of All Control Signals For Excellent Security
- Compatible With Most Existing Network Infrastructure To Reduce installation Costs

Specifications

Power Requirements: 100 - 240 VAC, 5A, 50 – 60 Hz, <50 Watts
Network Requirements: 10/100/1000 Mb
Cat5e+
Multicast Enabled Switches
Fully Switched Network (no broadcast hubs)
Network Connector: One RJ45 Network Socket
Wiring Requirements: 24 AWG Minimum (Cat5e+)

Environmental Parameters:
Operating: Temperature: 32° to 122° F (0° to 50° C)
Relative Humidity : 15% to 95%, non-condensing
Storage: Temperature: -4° to 158° F (-20° to 70° C)
Barometric Pressure: 8.3 PSI (15,600 Ft)

Dimensions:
Height: 1.7" (4.4 cm)
Width: 19.0" (49.2 cm)
Depth: 8.7" (22.5 cm)
Weight: 8.5 lbs (3.9 kg)

Description

The TCC2000 is the main component of a Telecenter U school. School safety is improved with Telecenter U installations because of its local survivability. When short term connection to the District Server is lost, the TCC2000 can still make pages, intercom calls, SIP-based features, and provide local emergency notification indefinitely. In addition, the System is able to maintain configured bell schedules for a minimum of 48 hours.

Providing full page and audio control of all local campus devices, the TCC2000 gives administrators the power to handle all school communication functions. The TCC2000 is also a SIP Gateway and provides full administration of all locally attached campus communication devices.

Network compatibility is assured with flexibility for 10-100-1000 Base-T networks. The TCC2000 provides continuous hardware monitoring of network status to ensure system operations. Front panel LEDs give installers and users a visual indication of TCC2000 operational status. To simplify TCC2000 installation, configuration is done using a standard Web browser. All call-in and call control information is stored in the TCC2000 Campus Controller.

The TCC2000 enables the Telecenter U system to distribute simultaneous live audio streams that handle the paging needs of small, medium and large schools. All live or pre-recorded paging streams can be routed to up to 100 paging zones throughout a facility or district. In addition to pre-recorded audio paging, the TCC2000 can provide scheduled bell tones and program audio distribution to all, or select, paging zones. All audio tasks can be prioritized, this allows, for example, Emergency notifications to be heard in place of lower priority audio events such as bells.

Associated Equipment

TCU2000SW Telecenter U Campus Edition, Enterprise License
TCC2011 IP Classroom Module
TCC2022 Zone Module
TCC2033 Auxiliary I/O Module
TCC2044 IP Admin. Console

Architect and Engineer (A&E) Specifications available online at: customerconnection.rauland.com
Specifications subject to change without notice

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www.rauland.com

Rauland-Borg Corporation

Telecenter U®

Model: TCC2000SW — Telecenter U Enterprise Software

TCC2000SW Telecenter U Enterprise Software

Features

- Master Software For All Telecenter U Devices
- Facilitates Districtwide Paging Compatible With High Performance 1000 Base-T Networks
- Supports Multiple Campus Controllers To Accommodate An Entire District
- Digital Encryption Of All Control Signals For Excellent Security
- Compliant With Most Existing Network Infrastructure To Reduce Installation Costs
- Enables SIP Connectivity to External Phone Systems

Specifications

Minimum District Server Hardware:

Operating System:	Windows Server 2008 R2 Standard Edition
SQL Server:	SQL Server 2008 R2 Standard
Processor:	Quad Core, Xeon E3-1225 V2, 3.2GHz or Faster
Memory (RAM):	4 GB
Hard Drive Space:	100 GB
Network Resources:	NTP, DHCP, DNS

Description

The Telecenter U Campus Edition Enterprise software gives administrators the power to handle all school communication functions.

Telecenter U Enterprise software provides a complete school communications solution for everyday, emergency and special events. Complete district coverage by Telecenter U enables emergency notifications for lockdown, lock out and evacuation. In addition to notifying in-school personnel, Telecenter U facilitates remote updates to bell schedules and access to other calendar management tools through an easy to use, Web enabled user interface.

Telecenter U devices are coordinated by the Enterprise Server Software, TCU2000SW. The district software controls and communicates with administrative, classroom input/output and zone hardware. Active Directory support assures only appropriate users have control of settings and functions.

Associated Equipment

TCC2000 Campus Headend Controller
TCC2011 IP Classroom Module
TCC2022 Zone Module
TCC2033 Auxiliary I/O Module
TCC2044 IP Administrative Console
TCC2055 Program Module

Architect and Engineer (A&E) Specifications available online at: customerconnection.rauland.com
Specifications subject to change without notice

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Canada • 905-607-2335 • Fax 905-607-3554
www.rauland.com

Rauland-Borg Corporation

VoIP

Multi-Port FXS/FXO VoIP Gateway Router

SmartNode™ 4520 Series

The SmartNode 4520 VoIP Gateway Router combines IP routing, VPN/Security, and Quality of Service for up to 8 transparent voice, fax, and data over any IP or PSTN network. Leverage low-cost packet-voice and IP services for complete branch office voice and data connectivity.

Up to 8 analog ports

Compact, reliable stand-alone VoIP gateway with different port options. Supports simultaneous voice or fax calls on all ports.

Toll-Quality VoIP

Advanced traffic management and shaping, combined with Patton's patent-pending DownStream QoS™ enforce uninterrupted toll-quality voice over best-effort networks.

Advanced Local Call Switching

Virtual interfaces and routing tables provide industry leading flexibility in call handling programming. Local call switching, soft fallback to alternative routes. Simultaneously connects to multiple SIP services/IP PBXs.

Complete SIP and T.38 support

Supports the complete range of industry standard VoIP: SIP, H.323, T.38 fax, fax and modem handling, DTMF relay. Codecs G.729, G.723, and so on.

Easy Management & Provisioning

Web-based management, SNMP, command line interface. Automated mass provisioning for efficient large-scale deployments.

Outstanding Interoperability

Proven integration for voice and T.38 fax with leading IP PBX systems and soft switch vendors.

Connect with confidence using the SmartNode 4520 Series Router. Integrating a complete enterprise router with local PSTN and remote packet-voice, the SN4520 supports eight simultaneous calls for a new standard in toll-bypass, remote/branch office connectivity, and enhanced carrier services.

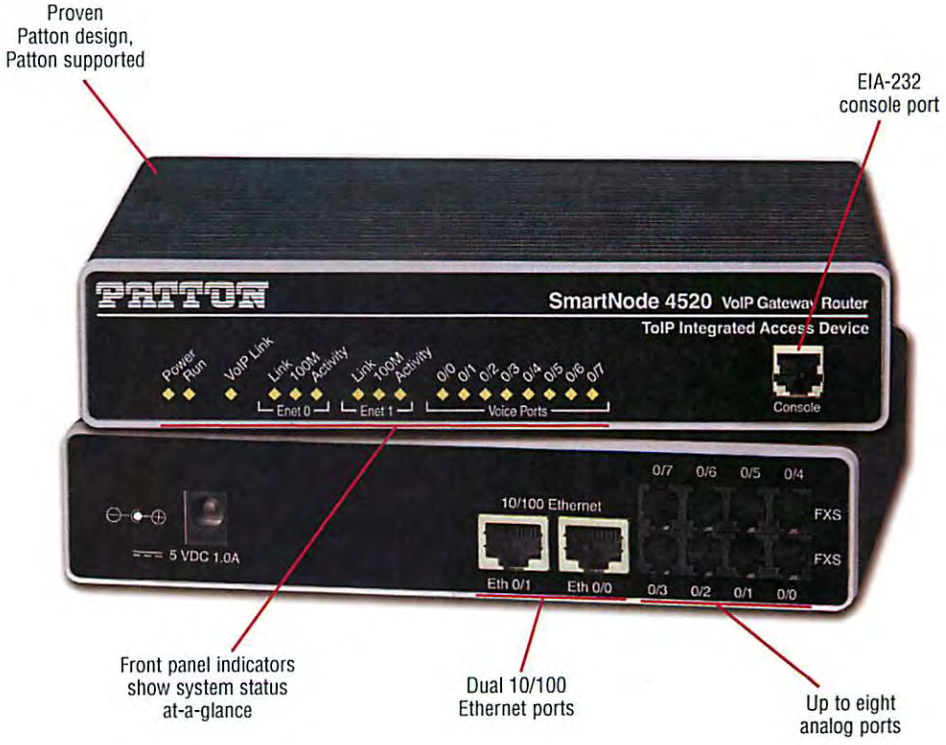
Perfect for the remote office, branch office, or PBX/switch extension, the SmartNode 4520 integrates all your voice, fax, and LAN traffic for seamless and secure networking. With its FXS analog ports the SN4520 connects to any legacy telephone or PBX and provides dial-tone, ringing, and caller-ID. When equipped with FXO ports, the local PSTN can be accessed enabling local calling and enhanced toll-bypass service.

With dual 10/100 Ethernet ports, the SN4520 provides guaranteed Quality of Service while passing LAN traffic at wire-speed. Voice traffic is prioritized while LAN/IP traffic shaping permits efficient access to the Internet and corporate networks. As a complete enterprise router, the SN4520 supports DHCP, NAT, Firewall/ACL, and PPPoE clients. While optional IPsec VPN and VLAN features tunnel data and AES/3DES ensures secure voice over the public network.

GET YOUR ADVANCE SHIP 5 YEARS ENHANCED WARRANTY

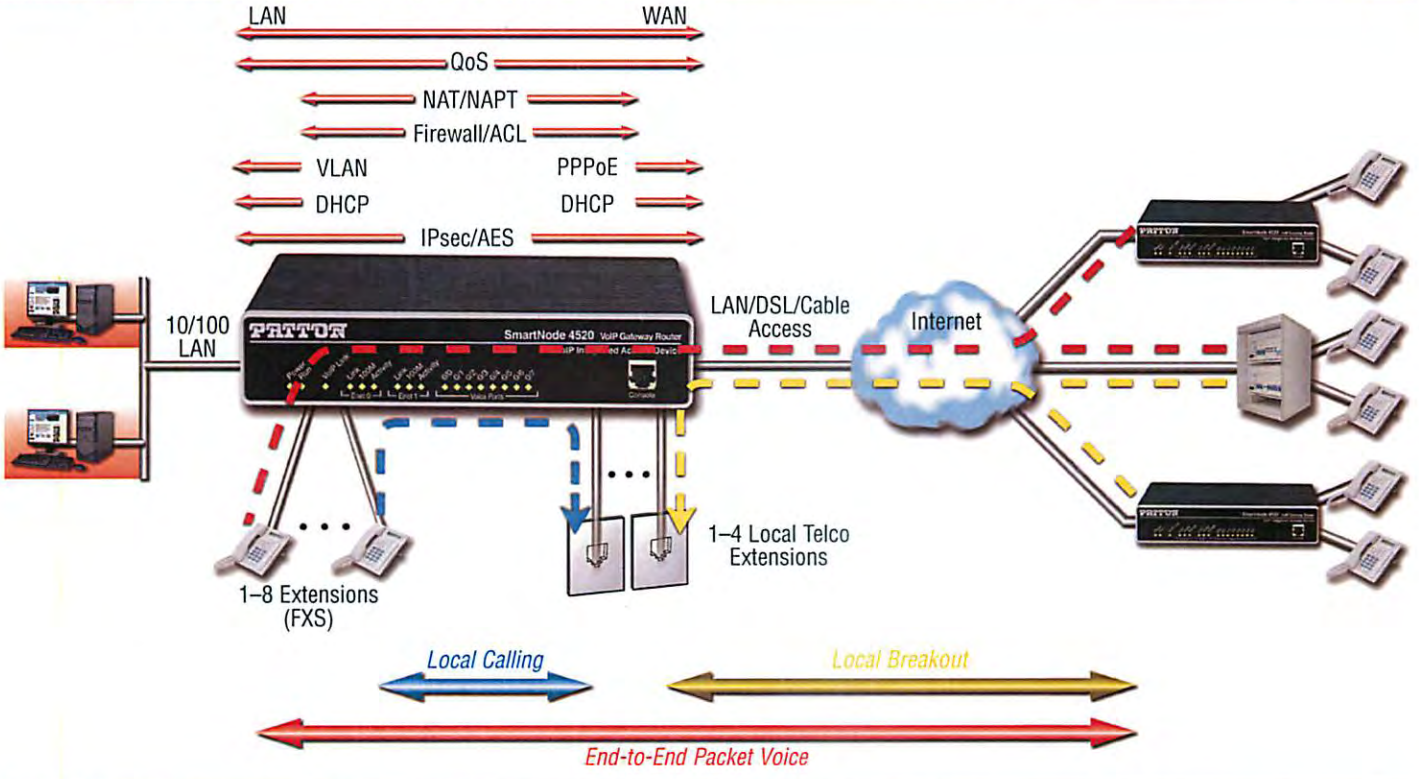
Special Rates Available Call for Details

Visit www.patton.com for more information.



PATTON® let's Connect!™

Remote Office/Branch Office Voice Extension and Access



Specifications*

Capacity
Up to 8 simultaneous VoIP or T.38 fax calls (depending on the model)

Voice Signaling
H.323v4, SIPv2 (B2BUA capable, multi-instance, simultaneous support of multiple registrars and direct IP dialing) • SIP call transfer, redirect • DTMF in-band & out-of-band • All tones programmable (dial, ringing, busy)

Voice Processing
CODEC G.711 a-law/mu-law, G.723, G.729ab, • G.726, G.727. T.38 fax relay (9.6 k, 14.4 k) • G.711 transparent fax and bypass

Call Switching and Services
Virtual interfaces • Regular expression based call routing and number manipulation • Number blocking • Short-dialing • Digit collection, distribution and hunt groups • Transparent line extension • Fallback Routing: Soft fallback to alternative route(s)

FXS Connectivity
2-wire Loopstart on RJ-11/12 •short haul loop 1.1km @3REN • EuroPOTS (ETSI EG201188) • programmable AC impedance, feeding, ring and on-hook voltage • Caller-ID FSK and ITU V.23/Bell 202 generation

FXO Connectivity
2-wire Loopstart on RJ-11/12 • Programmable impedance, ring detection, tone detection, disconnect supervision • Caller ID detection

Data Services
Two 10/100 Ethernet ports • Complete IP access router • DHCP Client & server • Packet fragmentation • Static firewall, NAT, NAPT RFC 1631 access control lists • DMZ port • IPsec, IKE, AES/DES/3DES Encryption (optional, hardware accelerated)

Quality of Service
Voice priority • DownStreamQoS™ • Traffic management, shaping and policing • IEEE 802.1p, TOS, DiffServ labeling • IEEE 802.1Q, VLAN tag insertion/deletion (simultaneous support of multiple VLANs)

Management
Web/HTTP, CLI with local console and remote Telnet access • TFTP configuration & firmware loading • SNMP MIB II and product MIB • Secure Mass provisioning for both firmware and unit/subscriber configuration • Built-in diagnostic tools (trace, debug, call generator)

System
CPU Motorola MPC875 @ 66MHz • Memory 32MB SDRAM/8MB Flash • Power 100–240 VAC (50/60 Hz) • Power dissipation 4-12W, model dependent

Temperature
32–104°F (0–40°C)

Humidity
Up to 90%, non-condensing

Compliance
EMC compliance: EN55022 and EN55024 • Safety compliance: EN 60950 • CE compliance • FCC Part 15 Class A • TBR21 (FXS) • RoHS

Ordering Information

SN4522/JS/EUI: 2 port FXS VoIP Gateway Router, 100–240 VAC external power supply (PS)

SN4522/JO/EUI: 2 port FXO Gateway Router

SN4524/JS/EUI: 4 port FXS VoIP Gateway Router

SN4522/JO/EUI: 4 port FXO Gateway Router

SN4526/4JS2JO/EUI: 4 port FXS 2 port FXO Gateway Router

SN4526/JS/EUI: 6 port FXS VoIP Gateway Router

SN4528/JS/EUI: 8 port FXS VoIP Gateway Router

SN4524/2JS2JO/EUI: 2 port FXS, 2 Port FXO Gateway Router

SN4528/4JS4JO/EUI: 4 port FXS, 4 Port FXO Gateway Router

Options & Accessories
SNSW-VPN1: License Key for IPsec VPN support (DES, 3DES, AES)

* Specifications subject to change without notice.

PATTON® *let's Connect!™*

07MSN4520-DS6

Patton Electronics Co.
7622 Rickenbacker Drive
Gaithersburg, Maryland 20879
USA
Phone **+1 301 975 1000**
Fax **+1 301 869 9293**
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NETGEAR
PROSAFE

ProSafe® 8-port Gigabit PoE Smart Switch with 2 Gigabit Fiber SFP

Data Sheet

GS110TP

GIG ETHERNET 1000 Mbps

Small, Yet Powerful Gigabit Smart Switch Packed with Advanced Features

Joining NETGEAR's ProSafe® family of Smart Switches with high performance and cost efficiency, this 10-port Gigabit Smart Switch is packed with powerful features capable of enhancing any type of business network. The GS110TP is designed for customers who need a low port density solution with the combination of Gigabit speed and PoE capability. The GS110TP comes with 8 dedicated 10/100/1000 Mbps copper ports to connect to your end devices and two additional Gigabit Fiber ports for uplinks with greater distance. With PoE capability on all 8 copper ports, the GS110TP can automatically detect PoE on the end devices and dynamically manage power assignments and priority. It is capable of delivering up to 15.4W of power to devices such as wireless access points, IP phones and IP cameras, providing flexibility and ease of deployment to your network.

The GS110TP comes with a comprehensive set of features, such as enhanced VLAN and QoS, access control lists (ACL), 802.1x port authentication, rate limiting and IGMP snooping and many more, to provide businesses with networks that are geared for growth while ensuring performance and reliability.

With the fanless design and compact form factor, the GS110TP offers quiet operation and is suitable for deployments in any type of environment, especially the ones which are sensitive to noise.

Like all NETGEAR ProSafe Smart Switches, the GS110TP is backed by the NETGEAR ProSafe Lifetime Warranty†, and 1-Year ProSupport 24x7 Advanced Technical Support*.

PoE Power Management

GS110TP offers useful PoE power management features to help you better control and monitor your power resource. The PoE timer can help turn off the PoE ports during certain times of the day so that your network can be more secure as well as energy efficient. It can also set prioritization on power usage so that specified ports are always guaranteed to get the power first if total power required exceeds the total power budget. The power will be assigned to the PoE ports dynamically depending on the actual power need of the individual network devices so that you don't need to do any calculation. The PoE LED on the front panel will light up if the PoE usage is reaching the threshold, meaning that insufficient PoE resource is left for powering up additional ports.

NETGEAR Green

NETGEAR Green

- Up to 70% power savings compared to the non-Green version
- Auto power-down mode saves energy when port is not in use
- Cable length detection reduces power usage when network cable is shorter than 10 meters

Advanced Quality of Service (QoS)

Priority queuing ensures high-priority traffic gets delivered efficiently, even during congestion from high-traffic bursts. Companies implementing network telephony or video conferencing, for example, need to be able to prioritize such voice and video traffic and other real-time applications over less latency-sensitive traffic to ensure reliability and quality. The ability to prioritize traffic ensures quality of latency-sensitive services and applications despite increasing traffic loads. The GS110TP provides an extensive set of QoS features:

- 802.1p-based prioritization
- Layer 3-based prioritization
- Rate limiting

Advanced Security

The GS110TP provides more robust security. This includes:

- 802.1x for authentication
- ACL filtering to permit or deny traffic based on MAC or IP addresses

24/7 TECHNICAL SUPPORT*

1-888-NETGEAR (638-4327)
Email: info@NETGEAR.com

NETGEAR LIFETIME WARRANTY†

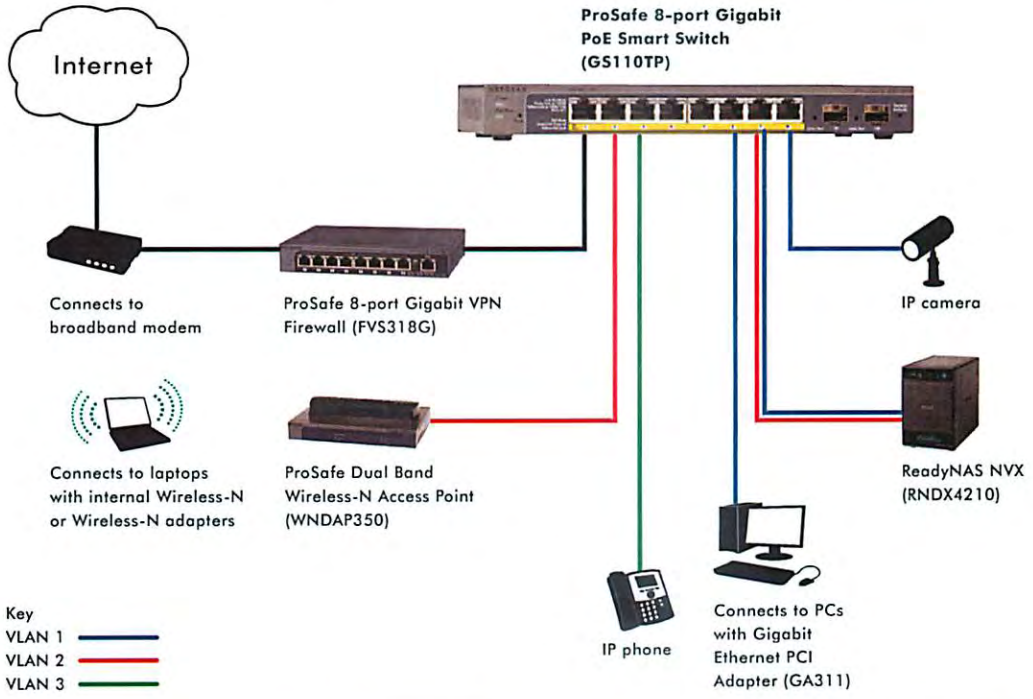
1-year Tech Support

Usability Enhancements

The GS110TP is a powerful switch, yet very ease to manage. It comes with many usability enhancements to help customers fully utilize the features for a more optimized and secure network. For example, the Auto Voice VLAN and Auto Video features will assist customers to easily set up VoIP or IP surveillance networks with a couple of simple steps. You don't need to be an IT professional to set up VoIP or IP surveillance. Security is critical for business networks. However, not everyone knows how to set up a secure network. The ACL Wizards on the GS110TP will guide even naïve users through the setup of access control and address filtering.

Centralized Management via the New Smart Control Center

With multiple switches in the network, managing configurations on each switch and upgrading firmware becomes a big challenge. NETGEAR's Smart Control Center that comes with the GS110TP and many other Smart switch models can help make this task much easier and simpler. It can perform discovery of the switches on your network, push configuration and firmware updates to multiple selected switches at once, and can even schedule when the tasks should be performed.



Technical Specifications

- **Network Protocol and Standards Compatibility**
  - IEEE 802.3i 10BASE-T
  - IEEE 802.3u 100BASE-TX
  - IEEE 802.3ab 1000BASE-T
  - IEEE 802.3z 1000BASE-X
  - IEEE 802.3x full-duplex flow control
  - IEEE 802.3af (DTE Power Via MDI)
- **Power Supply**
  - Power consumption: 59.3W maximum
- **Network Ports**
  - Eight (8) 10/100/1000 Mbps auto-sensing + 2 Gigabit SFP uplinks
- **Physical Specifications**
  - Dimensions: (W x D x H): 236 x 101.6 x 27 mm (9.3 x 4 x 1.07 in)
  - Weight: 0.7 kg (1.55 lb)
- **Performance Specifications**
  - Forwarding modes: Store-and-forward
  - Bandwidth: 20 Gbps full duplex
  - Network latency: Less than 4 µs for 64-byte frames in store-and-forward mode for 1000 Mbps to 1000 Mbps transmission
  - Buffer memory: 512 KB embedded memory per unit
  - Address database size: 4k media access control (MAC) addresses per system
  - Mean time between failures (MTBF): 157,004 hours (~18 years)
  - Acoustic noise: 0 dB
- **Electromagnetic Emissions**
  - CE mark, commercial
  - FCC Part 15 Class B
  - VCCI Class B
  - C-Tick
- **Environmental Specifications**
  - Operating temperature: 32° to 122° F (0° to 50° C)
  - Storage temperature: -4° to 158° F (-20° to 70° C)
  - Operating humidity: 90% maximum relative humidity, non-condensing
  - Storage humidity: 95% maximum relative humidity, non-condensing
  - Operating altitude: 10,000 ft (3,000 m) maximum
  - Storage altitude: 10,000 ft (3,000 m) maximum
- **Status LEDs**
  - Per RJ45 port: Link/activity, speed, PoE status
  - Per SFP port: Link/speed
  - Per device: Power, PoE Max
- **Power Adapter**
  - 48V, 1.25A external power adapter, localized to country of sale

- **Electromagnetic Immunity**
  - EN 55024
- **Safety**
  - CE mark, commercial
  - cUL IEC 950/EN 60950
  - CB
- **Administrative Switch Management**
  - IEEE 802.1Q static VLAN (64 groups, static)
  - Protected ports
  - IEEE 802.1p Class of Service (CoS)
  - Port-based QoS
  - DSCP-based QoS
  - DiffServ
  - IEEE 802.3ad Link Aggregation (manual or LACP)
  - IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
  - IEEE 802.1s Multiple Spanning Trees Protocol (MSTP)
  - IEEE 802.1ab Link Layer Discovery Protocol (LLDP)
  - LLDP-MED
  - SNMP v1, v2c, v3
  - RFC 1213 MIB II
  - RFC 1643 Ethernet Interface MIB
  - RFC 1493 Bridge MIB
  - RMON group 1, 2, 3, 9
  - Auto voice VLAN
  - DHCP Filtering
  - Auto denial-of-service (DoS) protection
  - HTTP and HTTPS
  - Ping and traceroute
  - Green features: Power saving by cable length (<10 m)
  - Power saving when link down
  - RFC 2131 DHCP client
  - DHCP filtering
  - IEEE 802.1x with Guest VLAN
  - Jumbo frame support
  - Port-based security by locked MAC addresses
  - MAC and IP-based ACL
  - Storm control for broadcast, multicast and unknown unicast packets
  - IGMP snooping v1/v2
  - Port-based egress rate limiting
  - SNTP
  - Port mirroring support (many-to-one)
  - Web-based configuration
  - Configuration backup/restore
  - Password access control
  - TACACS+ and RADIUS support
  - Syslog
  - Firmware upgradeable
  - PoE (46 Watts of power budget)

NETGEAR Related Products

Network

- ProSafe® 802.11g Wireless Access Point (WG302)
- ProSafe® 802.11g Wireless Access Point (WG103)
- ProSafe® 802.11n Dual Band Wireless Access Point (WNDAP330)

Desktops

- Gigabit Ethernet PCI Adapter (GA311)

System Requirements

- Category 5 network cables
- Network card for each PC
- Network software (e.g., Microsoft Windows®)
- Web browser (e.g., Internet Explorer® 5.0 or higher, Netscape® 6.0 or higher)

Warranty and Support

- ProSafe Lifetime Warranty†
- ProSupport 24x7 Advanced Technical Support, 1 year (included)*

ProSupport™ Service Packs Available

- XPressHW, Category 1: PRR0331 (3-year next-business day hardware replacement contract)
- OnCall 24x7, Category 1: PMB0331 (3-year Advanced Technical Support contract, including Remote Diagnostics performed by our technical experts for prompt resolution of technical issues, and next-business day hardware replacement)

Package Contents

- ProSafe® 8-port Gigabit PoE Smart Switch with 2 Gigabit Fiber SFP (GS110TP)
- AC adapter
- Rubber footpads
- Wall-mount kit
- Resource CD
- Installation guide

Ordering Information

- Australia & Japan: GS110TP-100AJS
- Europe General: GS110TP-100EUS
- North America: GS110TP-100NAS

NETGEAR®

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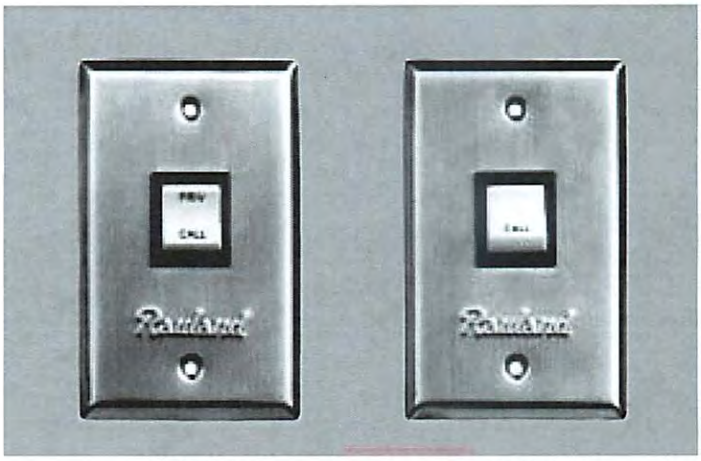
www.NETGEAR.com

* 1-year 24x7 Advanced Technical Support includes Remote Diagnostics performed by our technical experts for prompt resolution of technical issues.

† Lifetime warranty for product purchased after 05/01/2007. For product purchased before 05/01/2007, warranty is 3 years.



2308PC → 2305CS

FEATURES

- **Stainless Steel Face Plate**
- **Rugged Design and Construction**
- **Self-Wiping Switch Contacts**
- **Precious Metal Contact Surfaces**

SPECIFICATIONS

2308PC: 3-Position ("Privacy-Normal-Call"); Spring return from "Call" Position
2305CS: Momentary contact push-button type

Dimensions: Mounting Plate: 4 1/2" high (11.43 cm), 2 3/4" wide (6.94 cm)
Mounting Holes: 3 9/32" (8.33 cm) spacing
Depth Required: 1 3/4" (4.44 cm) minimum
Finish: Stainless steel
Terminations: 2305CS: Spade Lugs - pigtails
2308PC: Spade Lugs - pigtails

DESCRIPTION

The 2308PC & 2305CS, are flush-mounted Call Origination Switches designed specifically for use with Rauland Telecenter® and Director® communications systems. Each features an attractive stainless steel faceplate with a rugged, reliable switch. The switch contacts are self-wiping to prevent erratic operation caused by accumulation of foreign materials and have precious metal contact surfaces for low-contact resistance.

The 2308PC is a three-position switch designed for use in systems having call displays or annunciator lights, and including selective privacy. The rocker mechanism has three positions: "off," "call," "privacy." When placed in the privacy position, classroom privacy is absolutely assured, but the control center may still call the room.

The 2305CS pushbutton switch is ideal for use in systems having call displays or annunciator light call origination without selective privacy.

ARCHITECTS AND ENGINEERS SPECIFICATIONS

2308PC. The Call Origination Switch shall be a Rauland Model 2308PC or approved equal. It shall be of the 3-position rocker type having a spring return "call" position. The switch contacts shall be of the self-wiping type and shall be fully enclosed. The switch shall be mounted on a single-gang stainless steel wall plate, with the rocker button having permanent die-stamped and filled designations.

2305CS. The Call Origination Switch shall be a Rauland Model 2305CS or approved equal. It shall be of the momentary contact pushbutton type and shall be fully enclosed. The switch contacts shall be of the self-wiping type with precious metal contact surfaces. It shall be mounted on a single-gang stainless steel wall plate.

2308PC

2305CS

RAULAND-BORG CORPORATION
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In Canada: RAULAND-BORG (CANADA) INC. • 6535 Millcreek Drive, Unit 5, Mississauga, Ontario, Canada L5N 2M2 • (905) 821-2225 • FAX: (905) 821-8325

CVA Series
Power Amplifier

The sub compact CVA-25-1 and CVA-50-1 are built to meet the rigorous demands of high quality commercial, industrial and Pro Audio sound installations. Low cost, lightweight and convection cooling make this Class D amplifier flexible enough for a broad range of applications requiring quiet amplification. With an extremely compact form factor, the CVA's allow amplification to be located in places normally off limits to standard amplifiers without compromising sound or power. The Plenum rating (UL 2043) and remote volume control further compliment the recessing options. Our Signal Sense Power Technology TM (SSPT TM) ensures the amplifier is only powered when there is a signal present, saving energy and extending product life. Like all Stewart products, the CVA's are designed for sonic accuracy, high efficiency and extended duty cycles.

CVA's

CVA-25-1 25W x 1 70V/100V
CVA-50-1 50W x 1 70V/100V

Features:

- Sub Compact 1/4 rack package
- Mono constant voltage amplifier (70V or 100V)
- Music and fire alarm muting
- Clean full–range dynamic power
- Signal Detect trigger for sleep & wake up
- Remote volume control
- Multiple mounting options
- External inline power supply
- Made in the USA

Applications:

- Boardrooms & classrooms
- AV projection systems
- Lecterns and Podiums
- Plenum applications, UL 2043 rated
- Pole mounting option
- Fixed installations with amplifiers located in listening environment
- Behind flat screen televisions
- Applications where traditional amplifiers won't fit

STEWARTAUDIO
The Difference is Hear

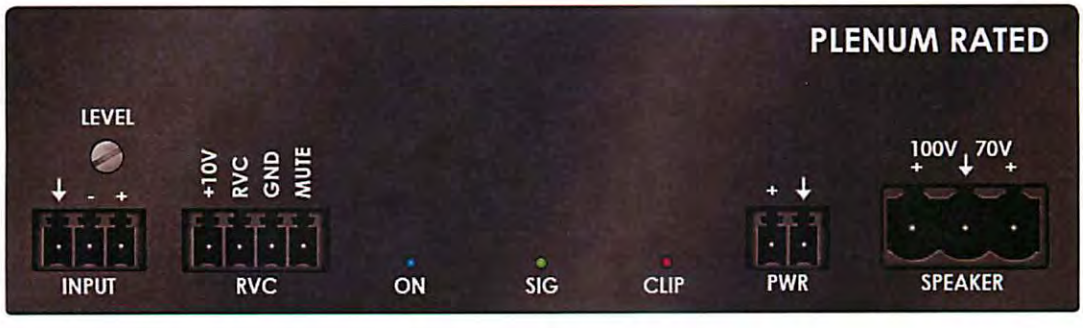
14397 Cuesta Court Ste D1 • Sonora Ca 95370 • TEL: 209.588.8111 • www.stewartaudio.com

CVA Series

CVA-25-1 25W x 1 70V/100V
CVA-50-1 50W x 1 70V/100V

Specifications

CVA-25 X 1 70V/100V	25 W
CVA-50 X 1 70V/100V	50 W
Frequency Response (+0, –3 dB)	100 Hz—20 kHz
Power Bandwidth (+3, –3 dB)	80 Hz—30 kHz
THD+N	<.1% @ Full Power
Signal-to-Noise Ratio	>80dB
Remote Volume Control	0-10V DC, 4 Pin Euro Block
Input Sensitivity	.5V (-3 dBV)
Standard Voltage Gain	151X (43dB) @ 70.7 Volts out
Input impedance (Balanced/Unbalanced)	20k Ohms/10k Ohms
Sleep, Idle Current Draw , 1/8 power draw	0.005/ 0.01/0.15 Amps
Class	D
Input Connectors	Euro Block 3 Pin, 3.5mm
Output Connectors	Euro Block 2 Pin, 5mm
Power Supply	External in-line 48VDC (Included), 2 pin Euro Block
Cooling	Convection–Cooling (No Fans)
Controls	Level
LED Indicators	Power, Signal Present & Clip
Construction	Aluminum Chassis & Top Cover
Dimensions (height, width, depth)	1.25"H x 4.35" W x 3.2" D
Weight CVA-25/CVA-50	<.7 lbs (0.32 kg)/1.2 lbs (0.54 kg)
Warranty	3 years
Plenum Rating	UL 2043 Approved



STEWARTAUDIO
The Difference is Hear

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Sonora Ca 95370
TEL: 209.588.8111
www.stewartaudio.com

BIAMP™

MPA250
Multi-Purpose Amplifier

MPA250 single-channel, multi-purpose amplifiers deliver a full 250 Watts of power into direct or distributed speaker systems. The MPA250 is designed for reliable service in permanent installations, and comes complete with short-circuit and thermal protection, including front/rear panel indicators and automatic reset. Plug-in barrier strip input and screw terminal outputs provide trouble-free, dependable connections. MPA250 amplifiers are UL listed and carry Biamp's five-year warranty.

FEATURES

- 250 watts at all outputs (4Ω direct & transformer)
- internal transformer (8Ω, 70V, 25V, & 25V-CT outputs)
- signal/peak & temp/fault indicators on front & rear panels
- balanced/unbalanced input selector on rear panel
- level control & input sensitivity selector on rear panel
- high-pass filter selector on rear panel (12dB/oct. @ 125Hz)
- input on plug-in barrier - outputs on screw terminals
- short-circuit & thermal protection with automatic reset
- variable speed fan (quiet, reliable - no filter maintenance)
- incorporates **AES** recommended grounding practices
- covered by Biamp Systems' five-year warranty
- **UL / C-UL** listed

ARCHITECTS & ENGINEERS SPECIFICATION

The power amplifier shall provide single channel, reliable continuous power of 250 Watts at a 4 ohm direct output. This same 250 Watts shall also be available, via an internal transformer, at 8 ohm, 70V, 25V, & 25V-CT outputs. Output connections shall be on rear panel screw terminals. Input connection shall be on rear panel plug-in barrier strip. Balanced or unbalanced input shall be selectable via rear panel switch. Input sensitivity, of either 775mV or 300mV, shall be selectable via rear panel switch, and a screw-driver adjustable level control shall be included. A high-pass filter of 12dB/octave @ 125Hz shall be selectable via rear panel switch. Short-circuit and thermal protection circuitry shall be provided, with automatic reset. Signal/peak and temp/fault indicators shall be provided on both front and rear panels. Amplifier cooling shall be by means of an internal variable speed fan, which shall require no filter or associated maintenance.

Frequency Response shall be +0/-1dB from 20Hz to 20kHz. THD shall be less than 0.2% from 20Hz to 20kHz at rated power to the 4 ohm direct output, and less than 1.0% from 100Hz to 15kHz at rated power to any transformer output. Signal-to-Noise Ratio shall be greater than 90dB from 20Hz to 20kHz at rated power to the 4 ohm direct output. Power consumption shall be less than 900 Watts. Dimensions shall be 3.5 inches (2 rack spaces) high, 19 inches wide, and 8.5 inches deep. Weight shall be 23 lbs. The amplifier shall be UL listed and shall carry a five-year warranty.

The amplifier shall be a BIAMP MPA250.

Biamp Systems, 10074 S.W. Arctic Drive, Beaverton, Oregon 97005 U.S.A. (503) 641-7287 www.biamp.com

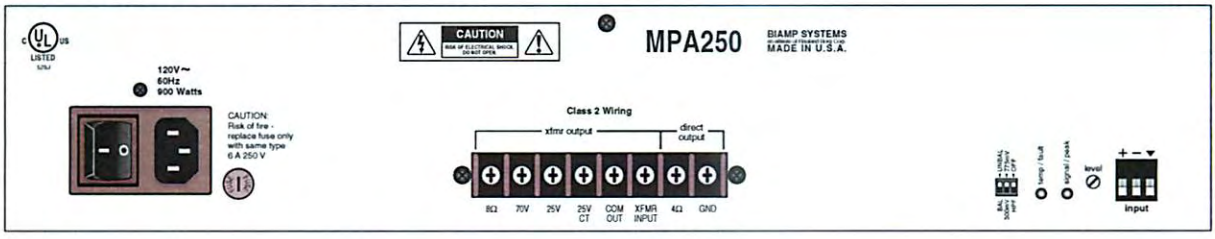
an affiliate of Rauland-Borg Corp.

BIAMP™

MPA250 SPECIFICATIONS

Continuous Power (4 ohm direct & transformer outputs):	250 watts	**Input Impedance:**	
Signal-to-Noise Ratio (20Hz~20kHz):		balanced	20k ohms
referenced to 250 watts into 4 ohm direct output	> 90dB	unbalanced	10k ohms
Total Harmonic Distortion:		**Input Sensitivity** (selectable):	775mV / 300mV
20Hz~20kHz @ 250 watts into 4 ohm direct output	< 0.2%	**Power Requirements:**	120VAC @ 60Hz
100Hz~15kHz @ 250 watts at transformer outputs	< 1.0%	**Power Consumption:**	900 watts
Intermodulation Distortion (SMPTE):	< 0.35%	**Dimensions** (H x W x D):	3.5" x 19" x 8.5" (89 x 483 x 216mm)
Frequency Response (20Hz~20kHz):	+0/-1dB	**Weight:**	23 lbs. (10.5kg)

MPA250 REAR PANEL DIAGRAM

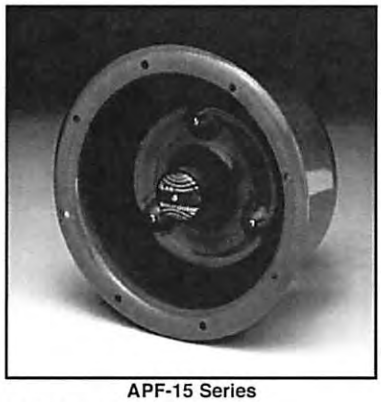


OMNI-PURPOSE® 15 WATT FLANGE-MOUNTING LOUDSPEAKERS

APF-15
APF-15T
L20 Series

L20-100 Shown with APF-15 and BX-3A

L20-101 Shown with APF-15T



APF-15 Series

TECHNICAL SPECIFICATIONS

Models:	APF-15, APF-15T
Power Rating:	15 Watts continuous
Frequency Response:	600-14,000Hz (nominal) 700-5,500Hz (± 5dB)
Sensitivity:	120dB at 15 Watts (peak) 114dB at 15 Watts / 1 Meter (avg) 700-5,500Hz 104dB 1 Watt/1Meter (avg) 700-5,500Hz
Dispersion Angle:	95° (-6dB, 2000Hz octave band)
Dimensions:	APF-15=5⅝" Dia. x 3⁷⁄₁₆" D x 6¹⁵⁄₁₆" Dia. flange APF-15T=5⅝" Dia. x 5³⁄₁₆" D x 6¹⁵⁄₁₆" Dia. flange
Weight:	APF-15=1.7 lbs (.78kgs) APF-15T=2.6 lbs. (1.2kgs)
Finish:	Grey baked epoxy

ARCHITECT AND ENGINEER SPECIFICATIONS

Loudspeaker shall be Atlas Sound Model _____ (APF-15 or APF-15T) or approved equal. Unit shall be double re-entrant type with compression driver mounted within weather-resistant housing. Audio power capability shall be 15 watts continuous. Frequency response shall be 600-14,000 Hz (nominal), 700-5,500 Hz (± 5dB). Sound pressure level shall be 114dB (15W/1M), 104dB (1W/1M). Sound dispersion angle shall be 95 degrees. Transformer-equipped loudspeaker shall have impedance selection via seven position switch of 5000, 2500, 1300, 666, 333, 89 and 45 ohms. Power taps shall be available at .48, .94, 1.8, 7.5 and 15 watts on 25V line; 1, 2, 3.8, 7.5 and 15 watts on 70.7V line; and 2, 4, 7.7, 15 watts on 100V line. Loudspeaker mounting shall be by eight ⅜" evenly space holes. Model APF-15 dimensions shall be 5⅝" Dia. x 3⁷⁄₁₆" Deep with 6¹⁵⁄₁₆" Dia. flange. Model APF-15T dimensions shall be 5⅝" Dia. x 5³⁄₁₆" Deep, with 6¹⁵⁄₁₆" Dia. flange. Finish shall be grey baked epoxy.

FEATURES

- High-efficiency, 15 watt compression driver with proven record of outstanding service reliability
- Double re-entrant design provides superior audibility of voice and tone signaling
- Vandal and environment-resistant metal construction for outdoor or indoor use
- Transformer(T) equipped version for 25, 70.7, or 100V line
- May be flange or recess mounted
- Choose from matching grilles, enclosures and mounting. rings (order separately)

APPLICATIONS

Communicate voice and electronic signals clearly in industrial, commercial, recreational, transportation and service facilities with APF Series loudspeakers. These environment-resistant flange and recessed-mounting units are ideal for indoor or outdoor applications where high-intelligibility paging or intercommunications are necessary.

GENERAL DESCRIPTION

Provide 15 watts of continuous power handling with superior intelligibility and efficiency with Atlas Sound APF Series Omni-Purpose® loudspeakers. Vandal-resistant units are designed for flange or recessed mounting to panels, interior/exterior walls, or ceilings. Metal construction withstands adverse temperatures, humidity and physical abuse. For flexibility and optimum adjustment convenience, transformer-equipped Model APF-15T includes the Vari-Tap® Control/connect center with 7 position, wattage/impedance selection switch. Magnet assembly is equipped with self-aligning field replaceable diaphragm. Weather-resistant metal construction and enclosed wiring terminals eliminate the need and cost of a backbox. However, for aesthetic consideration and retrofit convenience, models will flange mount to any standard size ceiling or wall baffle and/or enclosure capable of accommodating conventional 6" or 8" diameter loudspeakers. (See chart below). Model MK-2 or FAMT-6 mounting kit is required for 8" models.) Recessed installation may be accomplished by mounting Models APF-15 or APF-15T into a 4" or 5½" deep opening, respectively, or to an L20 Series enclosure. L20 Series also includes mounting rings and baffles (see below). Loudspeakers are finished in grey baked epoxy. UL versions, Models APF-15TU and APF-15TUC are available.
(Request SL2-1459).

ACCESSORY

BX-3A Vandal Resistant Cover Plate for Armored Cable and Conduit Connection. Constructed of Cast Aluminum.

GRILLES 20-gauge CRS White Enamel Finish	ENCLOSURES 20-gauge CRS	or	MTG. RINGS 20-gauge CRS
L20-100 Round Grille 11" (279mm) Dia. x ⅜" (10mm) Deep	**L20-201** Round Recessed 8⁵⁄₁₆" (217mm) Dia. x 6" (152mm) Deep		L20-220 Round Style 8⁵⁄₁₆" (217mm) Dia. x ⅝" (16mm) Deep L20-222 same as L20-220 with mounting ears for 24" lay-in tile
L20-101 Square Grille 10½" (267mm) Square x ³⁄₁₆" (5mm) Deep	**193-8-6** Square Recessed 9⅝" (244mm) SQ. x 6" (152mm) Deep **L20-213** Square Surface Mount White Enamel 10½" (270mm) SQ. x 6" (152mm) Deep		
VP161-APF Vandal Proof Square Grille 10¾" (273mm) Square x ¾" (19mm) Deep	**SE161-R6** Square Surface Mount White Enamel 11" (279mm) SQ. x 6" (152mm) Deep **193-8-6** Recessed enclosure		

Specifications subject to change without notice

Atlas Sound
1601 JACK MCKAY BLVD. / ENNIS, TEXAS 75119 U.S.A.
TELEPHONE: (800) 876-3333 / FAX (800) 765-3435
AtlasSound.com

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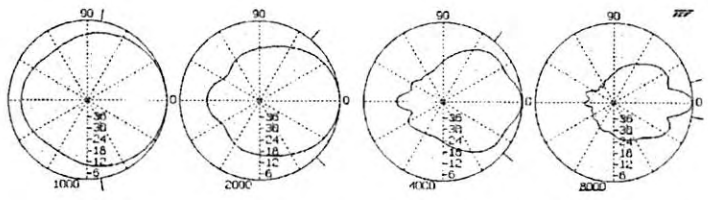
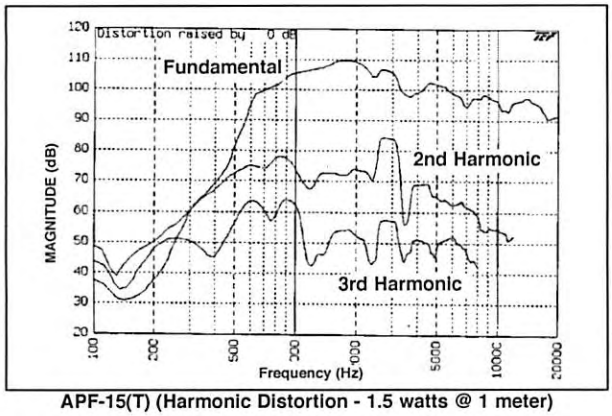
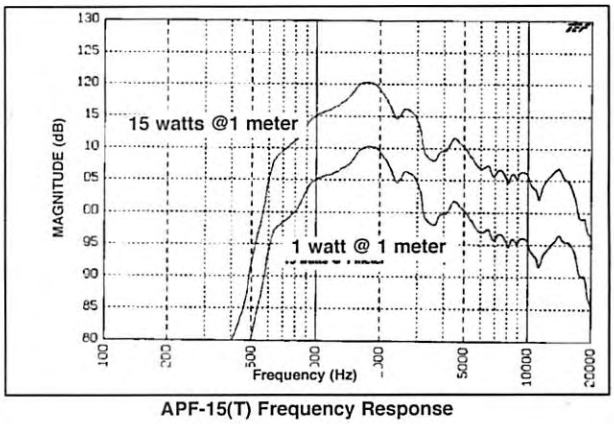


Polars Are Normalized To Zero On Axis

Frequency (Hz)	Q	Di	Beamwidth (Degrees)
1000	3.37	5.27	150
2000	7.30	8.63	95
4000	11.95	10.77	90
8000	44.29	16.46	25



APF-15(T) (Harmonic Distortion - 1.5 watts @ 1 meter)



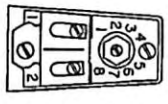
APF-15(T) Frequency Response

DRIVER PROTECTION: The horn loudspeaker should not be operated at frequencies below horn cut-off. It is suggested that any program material be high-passed at 300 Hz with a 6dB per octave filter. This can be done by a low level filter at the amplifier input or by a series capacitor at each loudspeaker. Electrolytic capacitors can be used but they must be non-polarized *(See Typical Capacitor Values Chart).*

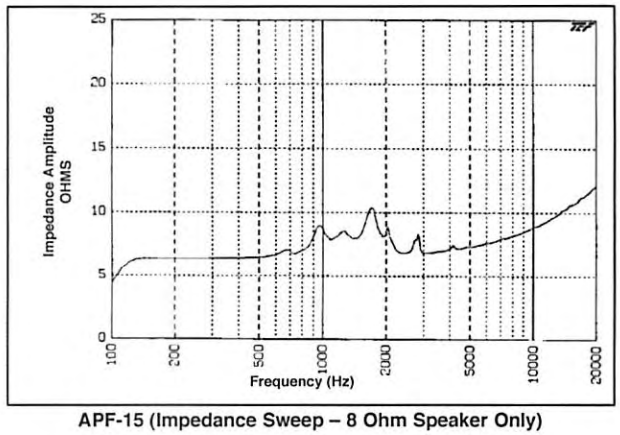
TYPICAL CAPACITOR VALUES			
8 Ohm Driver	25Volt Line	70Volt Line	100Volt LIne
70 mfd	15 mfd	2 mfd	1 mfd

APF-15T Vari-Tap® Control Connect Center Xfmr. Power Taps				
Switch Position	Impedance (Ohms)	Watts @ 25V	Watts @ 70.7V	Watts @100V
1	5,000	–	1	2
2	2,500	–	2	47
3	1,300	.48	3.8	7.7
4	666	.94	7.5	15
5	333	1.8	15	X*
6	89	7.5	X*	X*
7	45	15	X* (* Do Not Use)	X*

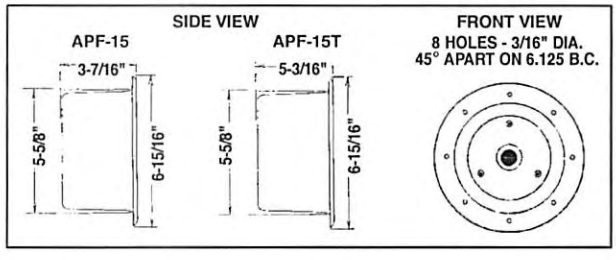
CONNECTION: Amplifier output line connection is made to the screw terminals which are designed with wire retainers for insured reliability. Input terminals are numbered (#1 and #2) to maintain system phasing. (#2 is the positive terminal). The wide and narrow slots adjacent to #1 and #2 are used for cable strain relief.



Vari-Tap® Selector Switch



APF-15 (Impedance Sweep – 8 Ohm Speaker Only)



Atlas Sound products are designed and tested in our well-equipped research laboratory which contains a fully anechoic chamber, complete analog Bruel & Kjaer measurement equipment and Techron® TEF 20® audio analyzer. Atlas Sound is proud to be a be a beta site for TEF software.

Specifications subject to change without notice

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TO: **MEMBERS, BOARD OF EDUCATION**

FROM: **DR. ANTHONY W. KNIGHT, SUPERINTENDENT**

DATE: **JUNE 24, 2014**

SUBJECT: **4. APPROVE POWER EFFICIENCY AGREEMENT FOR INSTALLATION OF EV CHARGING AND STORAGE SYSTEM**

ACTION

ISSUE: Shall the Board approve a power efficiency agreement with Green Charge Networks, LLC, for installation of EV charging and storage systems at Brookside Elementary School, Medea Creek Middle School, and Oak Park High School?

BACKGROUND: Green Charge Networks, LLC, has proposed to provide installation of EV charging and storage systems at Brookside Elementary School, Medea Creek Middle School, and Oak Park High School. Offered under a California program, Green Charge will install EV charging and storage equipment, and provide all necessary operation and maintenance services, all at no charge to the District. OPUSD will receive 25% of the annual savings generated by this system. The 10-year cumulative share of savings earned by the District is estimated to be $93,634. The proposed power efficiency agreement is attached for the Board's review, accompanied by an overview of the programs benefits.

ALTERNATIVES:

1. Approve the power efficiency agreement with Green Charge Networks, LLC, for installation of EV charging and storage systems at Brookside Elementary School, Medea Creek Middle School, and Oak Park High School.
2. Do not approve the power efficiency agreement.

RECOMMENDATION: Alternative No. 1

Prepared by: Julie Suarez, Director, Business Operations
Martin Klauss, Assistant Superintendent, Business and Administrative Services

Respectfully submitted,

Anthony W. Knight, Ed.D.
Superintendent

Board Action: On motion of _____, seconded by _____, the Board of Education:

VOTE:	AYES	NOES	ABSTAIN	ABSENT
Laifman	_____	_____	_____	_____
Pallant	_____	_____	_____	_____
Rosen	_____	_____	_____	_____
Yeoh	_____	_____	_____	_____

POWER EFFICIENCY AGREEMENT

This Power Efficiency Agreement (this "Agreement") is made and entered into as of the — day of_____, 2014 (the "Effective Date"), by and between Oak Park Unified School District with offices located at _5801 Conifer Street, Oak Park, CA, ("Host"), and Green Charge Networks, LLC, a Delaware limited liability company with offices located at 309 Laurelwood Road, Suite 24, Santa Clara, CA 95054 ("Owner" and, together with Host, each, a "Party" and together, the "Parties").

RECITALS

WHEREAS, Host owns and occupies certain premises as identified in Exhibit A (collectively, the "Premises");

WHEREAS, Owner develops, constructs and installs energy storage systems to reduce hosts demand charges;

WHEREAS, Owner has conducted and completed a demand charge reduction proposal requiring installation of a energy storage system, as more fully described on Exhibit B hereto (collectively, the "System"), on a portion of the Premises for the purpose of reducing Host's peak demand for electrical energy by storing electrical energy on the System (such energy savings services, the "Power Efficiency Services");

WHEREAS, Host desires to purchase the Power Efficiency Services in order to reduce demand charges that Host pays from time to time to its local utility provider, and Owner is willing to provide the Power Efficiency Services, on the terms and subject to the conditions set forth herein.

NOW THEREFORE, in consideration of the mutual promises set forth below, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby agree as follows:

AGREEMENT

1.TERM AND TERMINATION;.

1.1 Term. The term of this Agreement, and the Power Efficiency Services provided under it, shall commence on the Effective Date and shall run for a period ending on the Ten (10) year anniversary of the last Site Commercial Operation Date (as defined in Section 3.8 below) (the "Initial Term"), unless terminated earlier pursuant to the provisions of this Agreement. After the Initial Term, Host may purchase the System at fair market value, Host and Owner may renew this Agreement for one (1) additional five (5) year term (the "Renewal Term"); unless this Agreement is terminated before the expiration of the Initial Term or the Parties agree to a longer Renewal Term. The

Renewal Term shall be mutually agreed upon by the Parties in writing thirty (30) days prior to the expiration of the Initial Term. The Initial Term and the Renewal Term, if any, are referred to collectively as the "Term." The date on which the Term ends is referred to herein as the "Expiration Date."

1.2 Removal of System at Expiration. Owner shall, at Owner's sole expense, remove all tangible property comprising the System from the Premises on a mutually convenient date, but in no event later than thirty (30) days after the Expiration Date. Owner shall undertake such removal in such a manner as to not interrupt operation of the business at the Premises, including an interruption of electrical power. In connection with such removal, Owner shall remove above ground support structures and repair any damage to the Site and any other area in which any portion of the System was installed and restore such areas to their original condition, excluding ordinary wear and tear, provided that Owner shall not be required to remove large electrical conduits which Owner shall cause to be capped and secured. Owner shall leave the Premises in neat and clean order. If Owner fails to completely remove the System and repair the affected area as provided above, within thirty (30) days of the Expiration Date, Host may, upon ten (10) business days prior written notice to Owner, complete the necessary removal and/or restoration and Owner shall reimburse Host for the costs incurred by Host within ten (10) days after presentation by Host to Owner of reasonable supporting documentation describing the work performed and the cost thereof. In addition, should Owner fail to remove the System within such thirty (30) day period, Owner will be deemed to have abandoned the System and Host may, at Owner's sole cost, remove and dispose of the System, including by sale or otherwise, as Host sees fit in its discretion, provided that if Host realizes any proceeds from the sale of the System (which may or may not occur) Host will credit such proceeds against the cost of removal.

1.3 Host's Right to Terminate this Agreement. Host shall have the right to terminate this Agreement, without penalty:

(a) upon any Owner Default;

(b) Owner (A) commences a voluntary case under any bankruptcy law; (B) fails to controvert in a timely and appropriate manner, or acquiesces in writing to, any petition filed against Owner in an involuntary case under any bankruptcy law; or (C) any involuntary bankruptcy proceeding commenced against Owner remains undismissed or undischarged for a period of sixty (60) days;

1.4 Owner's Right to Terminate this Agreement. Owner shall have the right to terminate this Agreement, without penalty:

(a) upon any Host Default;

(b) upon ninety (90) day's notice, if an unstayed order of a court or administrative agency is entered having the effect of subjecting the provision and/

or sale of the Power Efficiency Service to federal or state regulation of prices and/ or service;

(c) upon ninety (90) days notice, if the Host load profile or electricity provider changes the manner in which Host's rate structures and demand charges are calculated which results in an actual materially lower Demand Charge Reduction Savings;

(d) if at any time Owner determines that it will not receive continued funding of the SGIP Incentive or financing;

(e) Host (i) commences a voluntary case under any bankruptcy law; (ii) fails to controvert in a timely and appropriate manner, or acquiesce in writing to, any petition filed against Host in an involuntary case under any bankruptcy law; or (iii) any involuntary bankruptcy proceeding commenced against Host remains undismissed or undischarged for a period if sixty (60) days.

(f) if Owner is unable to obtain proper permits or interconnection with the Local Provider.

1.5 Site Access.

(a) Host does hereby provide access to Owner certain space at each location comprising the Premises as identified on Exhibit A attached hereto (each space at each location, a "Site") for the sole purpose of installing, maintaining, operating, accessing, removing and replacing the System on such Site and otherwise satisfying its obligations and availing itself of the rights set forth in this Agreement. Owner may install, with Host's prior written consent, any improvements on each Site that Owner determines are reasonably necessary for the efficient operation of the System and provision of the Power Efficiency Services.

(b) Owner shall provide Host prior written notice at least five (5) business days before it or its contractors and/or subcontractors commence installation at any Site.

(c) At all times during the Term, Owner shall maintain insurance coverage as set forth in Section 15 to cover any damage caused to the Premises resulting from the installation, maintenance and operation of the System.

2.CONTINGENCIES.

2.1 Contingencies Available to Host. Host shall have the option to rescind this Agreement in the event of the following contingent events:

(a) Site. Host may rescind this Agreement if the Site conditions are not optimal for installation of the System, provided that prior to the time of installation of the System has commenced at the Site but in no event longer than ninety (90) days following the Effective Date (the "Site Contingency Period") Host provides Owner with written notice of the rescission.

(b) Landlord Approval. Host may rescind this Agreement if Host is unable to obtain from Host's Landlord of the realty at which the Site is located or any other party having consent and approval rights over the Site consent necessary for the installation, operation and removal of the System, provided that prior to the time installation of the System has commenced at the Site but in no event longer than ninety (90) days following the Effective Date (the "Landlord Contingency Period"): (1) Host has employed commercially reasonable efforts to obtain the consent of the Landlord or any other party having consent and approval rights over the Site within such 90-day period; and (2) Host provides Owner with written notice of the rescission or that it has failed to obtain said consent.

(c) Notice to Proceed. At any time prior to the expiration of the Site Contingency Period and the Landlord Contingency Period, Host may waive all its available contingencies and rescission rights thereunder (as set forth above in Section 2.11(a)) by issuing to Owner a written notice advising Owner to proceed with activities necessary to the sourcing of components for and installation of the System (the "Notice to Proceed"). Email shall be an acceptable method for delivery of the Notice to Proceed.

2.2 Post-Rescission. In the event Host exercises its rescission rights as set forth above in Section 2.1, Host shall have no further liability to Owner and shall not be obligated to pay Owner a termination payment for termination of this Agreement.

3.CONSTRUCTION, INSTALLATION AND TESTING OF SYSTEM.

3.1 Use of Contractors and Sub-contractors. Owner shall be permitted to use contractors and sub-contractors to perform its obligations under this Agreement. Owner shall continue to be responsible for the quality of the work performed by its contractors and sub-contractors. Owner shall remain responsible for obligations, services and functions performed by sub-contractors to the same extent as if such obligations, services

and functions were performed by Owner's employees and for purposes of this Agreement such work shall be deemed work performed by Owner.

3.2 Liens and Payment of Contractors and Suppliers. Owner shall pay when due all valid charges from all contractors, subcontractors and suppliers supplying goods or services to Owner under this Agreement and shall keep the Facility free and clear of any liens related to such charges. Owner shall indemnify Host for all claims, losses, damages, liabilities and expenses resulting from any liens filed against the Facility or the Premises in connection with such charges; provided, however, that Owner shall have the right to contest any such lien, so long as it provides a statutory bond or other reasonable assurances of payment that either remove such lien from title to the Site and the Premises or that assure that any adverse judgment with respect to such lien will be paid without affecting title to the Site and the Premises. Upon Host's request, Owner will give Host copies of certificates of completion or similar documentation from Owner's contractors or sub-contractors, along with copies of all final lien waivers from Owner's contractors or sub-contractors.

3.3 Notice to Contractors and Sub-contractors. Owner shall, prior to commencing construction or maintenance of the System, notify all contractors and sub-contractors that Host shall not be responsible for payment for their work done on the Site, and all contractors and sub-contractors shall acknowledge in writing receipt of such notice.

3.4 Access Rights. Owner and its employees, agents, financiers, representatives and sub-contractors, if any, is granted the right to use such portions of the Premises as are reasonably required in order for Owner and its employees, contractors and sub-contractors, if any, to install, operate, maintain, and remove the System and otherwise satisfy its obligations under this Agreement. Owner shall notify Host prior to entering the Premises except in situations where there is imminent risk of damage to persons or property.

3.5 OSHA Compliance; Compliance with Law. Owner shall ensure that all Occupational Safety and Health Act (OSHA) requirements and other similar applicable safety laws or codes are adhered to in its performance under this Agreement. Owner shall comply with all applicable laws in its performance hereunder.

3.6 Approvals; Installation, Permitting and Interconnection. Owner shall submit detailed drawings (including, without limitation, an electrical plan showing all planned modifications to the existing electrical systems of the Site and such other plans as may be reasonably requested by Host) related to the installation of the System at a particular Site to Host for approval. Owner shall, at Owner's sole cost and expense, obtain all governmental approvals and other permits and approvals required for the installation and operation of the System, including approval for interconnection (the "Interconnection Notice") of the System with the local electricity provider or utility serving the Site (the "Local Provider"). Owner will be responsible for all permits, applications or other fees required in connection with the foregoing. Host will, if necessary, cooperate with

Owner's reasonable requests to assist Owner in obtaining such permits or approvals, but shall not be required to incur any costs or expenses in connection with such cooperation.

3.7 Financial Incentives. Unless expressly provided otherwise, all Rebates, or incentives available in connection with the System are owned by Owner. "Rebates" shall mean any and all state or Local Provider rebates, grants, or other funding offered for the development of energy system projects, including, but not limited to the Self Generation Incentive Program, Investment Tax Credit or local incentive programs. Host agrees, if necessary, to take all actions reasonably requested by Owner in order for Owner to obtain all rebates or subsidies made available in connection with the installation and operation of the System by any state government, local government, Local Provider or other source.

3.8 Commercial Operation Date. The commercial operation of the System with respect to each Site will commence on the date specified in the Interconnection Notice for such Site (each, a "Site Commercial Operation Date"). Host will use commercially reasonable efforts to take, or cause to be taken, all actions, and to do, or cause to be done, all things reasonably necessary to result in Owner being able to issue the Interconnection Notice to Host with respect to each Site.

4.SYSTEM OPERATIONS.

4.1 Owner as Owner and Operator. Host shall have no ownership rights in the System. Notwithstanding that it will be affixed to the Sites, the System will not be deemed a part of, or a fixture to, the Premises or any portion of it. The System shall at all times retain the legal status of personal property of Owner (or its operating subcontractor, as applicable) who shall pay any personal property assessments or charges owed on the System. Owner shall assure that all statements for personal property or other taxes applicable to the existence of, or operation of, the System are sent by the taxing authority(ies) directly to Owner. Owner shall at all times keep the System in good operating condition and in compliance with all manufacturer specifications, including periodic maintenance, and shall assure that all warranties remain in effect. Owner shall operate and perform, or cause to be performed, all repairs to, or maintenance of, the System at its sole cost and expense, except to the extent that any necessary repairs result from the sole negligence or willful misconduct of Host.

4.2 Tax Returns. Host will not take a position on any tax return or in other filings suggesting that it is anything other than a purchaser of the Power Efficiency Service and Owner shall be treated as the owner of the System for federal and state income tax purposes and shall retain title to any tax credits available under federal or state law with respect to the System.

5.DELIVERY OF SERVICES; FEES.

5.1 Calculation of Demand Charge Reduction Savings; Power Efficiency Fees.

(a) It is anticipated by the Parties that the operation of the System at each Site will result in a reduction in the demand charge, power or Kilowatt (KW) portion of Host's utility obligations to its Local Provider (such reduction in demand charges that would otherwise be paid, with respect to all Sites, in the aggregate, the "Demand Charge Reduction Savings") listed in Exhibit C. Owner shall calculate and provide to Host the amount of Demand Charge Reduction Savings on a monthly basis. This calculation will be based upon comparing the actual charges due to "demand charge" portion of Host's utility bills issued from its Local Provider to the avoided "demand charge" that Owner calculates that Host would otherwise have had to pay without the use of the System. In consideration of the Power Efficiency Services provided hereunder, Host shall pay to Owner an amount equal to seventy-five percent (75%) of the Demand Charge Reduction Savings (the "Power Efficiency Fee"). Host shall make all of its invoices/ statements with its Local Provider available to Owner for purposes of calculating the Power Efficiency Fee promptly after Host receives such invoices/statements.

(b) Owner shall invoice the other for the amounts due hereunder on a monthly basis or as otherwise agreed to by the parties, and undisputed bills shall be paid within thirty (30) days of receipt.

5.2 Operational Change. If at any time during this Agreement Host makes any changes to its business operations that reduce the amount or peaks of its electrical energy usage with its Local Provider by more than 25% of the previous year's demand for the same consecutive three-month billing period (an "Operational Change"), then the Host agrees to increase Owner's percentage of the Power Efficiency Fee to an amount that is mutually agreeable to the Parties at the time of such Operational Change for a period ending on the earlier to occur of (i) the third anniversary of the date of this Agreement; or (ii) Host's usage of electrical energy increases to a level such that an Operational Change is no longer occurring.

5.3 Environmental Attributes. Host's purchase of Power Efficiency Service pursuant to this Agreement does not include any entitlement to Environmental Attributes, tax benefits or other attributes of ownership of the System. All Environmental Attributes shall be retained by Owner, and may be used or disposed of by Owner in its sole discretion. For the purposes hereof, the term "Environmental Attributes" means any and all marketable environmental attributes or renewable energy credits, including but not limited to, carbon trading credits, renewable energy credits or certificates, emissions reduction credits, emissions allowances, green tags and tradable renewable credits, provided that in no event will the foregoing sever, erode or affect Host's right, title and interest in and to the Premises.

5.4 Risk of Loss. As between the Parties, Owner shall be deemed to have exclusive control (and shall be responsible for any property damage or injuries caused thereby) of the System and the electricity generated up to and including the point at which the System is interconnected to the customer meter. Owner shall bear all risk of loss or

damage to the System whatsoever, except to the extent resulting from the willful misconduct or gross negligence of Host (to the extent not otherwise covered by Owner's insurance). Owner shall be required to carry casualty and property insurance sufficient to protect Owner's interest in the System, as provided by Section 15 below.

5.5 ISO Markets & Demand Response Programs. Upon mutual agreement, Owner may secure additional revenue streams for both Host and Owner, and Owner may aggregate the System and the electrical energy stored in the System with other customers of Owner that have similar systems in order to allow Owner to operate as a participating generator for an Independent System Operator ("ISO"). As a participating generator to an ISO, Owner would be able to provide transmission and ancillary services to the electrical power system for a fee. Similarly, Host will cooperate with Owner to enter into any "Demand Response Programs using the battery storage" that Owner believes may generate additional savings or revenue to Host. Any revenue generated from Owner's operation as a participating generator to an ISO, or from entering into any Demand Response Programs will be split between Host and Owner at an agreed upon percentage.

6.RELOCATION OF SYSTEM.

Notwithstanding anything to the contrary in this Agreement, if Host ceases to conduct business operations at and/or vacates the Premises or is prevented from operating the System at the Premises prior to the expiration of the Term, Host shall have the option to provide Owner with a mutually agreeable substitute premises located within the same Local Provider district as the terminated System or in a location with similar utility rates. Host shall provide written notice thirty (30) days prior to the date that it wants to make this substitution. In connection with such substitution, Host shall execute an amended agreement that shall have all of the same terms as this Agreement except for the (i) Effective Date; (ii) Site Access, which will be amended to grant rights in the Premises where the System relocated to; and (iii) Term, which will be the remainder of the Term of this Agreement and such amended agreement shall be deemed to be a continuation of this Agreement without termination. At Host's cost, Owner shall remove the System from the vacated Premises prior to the termination of Host's ownership, lease or other rights to use such Premises. Excluding ordinary wear and tear, Owner shall return the Premises to its original condition including the removal of System support structures. If Host is unable to provide such substitute premises and to relocate the System as provided, any early termination will be treated as a default by Host.

7.OPERATIONS AND MAINTENANCE.

7.1 O&M Services. Owner shall be responsible for performing, or causing to be performed, all operation, repair, maintenance and monitoring services for the System during the Term. At all times, Owner shall promptly provide Host with all information reasonably requested relating to the operation, use, or any other matter relating to the System, subject, however, to any confidentiality requirements set forth herein. Owner shall be permitted, upon mutual agreement, to re-baseline, recalibrate and otherwise make modifications to the System, including, but not limited to, adding modular components

such as additional batteries or inverters. Notwithstanding the foregoing and anything in this Agreement to the contrary, all damage or injury to the System, whether requiring structural or nonstructural repairs, that are directly caused by, or that result solely from the misuse by or negligent conduct or omission of, Host may be repaired by Owner, at Host's sole cost and expense, to the condition that existed before the damage.

7.2 The O&M and service warranty will be provided for a 10 year period or the term of this contract. The O&M and system warranty will provide support, problem diagnosis, on-site repair and preventative maintenance to make sure the system is functioning correctly for 10 years after the Site Commercial Operational Date.

7.3 Host Site Obligations. Host shall take reasonable precautions to protect the System from vandalism. Notwithstanding anything to the contrary in this Agreement, Host shall not be required to undertake any additional measures related to the monitoring and security of the System than it otherwise would in its normal course of business if the System were not installed on the Premises. For the avoidance of doubt, Host shall be under no obligation to maintain the System or any other equipment installed by Owner within the Site.

7.4 Host Rights to Premises. Host further represents, warrants and covenants that it has obtained or it shall obtain any and all consents or approvals required in order for Host to grant access to the Premises under Section 1.5 of this Agreement and perform its obligations under this Agreement, and for Owner to take the actions with respect to the Premises contemplated in this Agreement, from any third parties: (i) with an interest in the Premises (including, without limitation, any owner, lender, lessee, ground lessor, or any party to any reciprocal easement agreement) or (ii) whose consent is otherwise required under conditions, covenants and restrictions documents, declarations or similar agreements affecting the Premises.

7.5 Suspension of Service. Owner shall be entitled to reasonably suspend delivery of Power Efficiency Service to the Premises for the purpose of maintaining and repairing any System and such suspension of service shall not constitute a breach of this Agreement. Owner shall ensure that any suspension in the delivery of Power Efficiency Service to the Host shall not cause an interruption of electricity service to the Premises supplied by the Local Provider.

7.6 Notifications of Malfunctions and Emergencies. Each Party shall notify the other as soon as reasonably practicable following the discovery by it of any material malfunction of the System or interruption in the supply of Power Efficiency Service from the System ("System Emergency"). Each Party shall designate and advise the other Party of personnel to be notified in the event of a System Emergency.

7.7 Structural Damage to Site Premises. Owner shall be liable for any damage caused by the System or the Owner's access to the Premises hereunder, including, without limitation, any damage to the business located at the Premises, damage to property, or injury to persons, or from any operation and/or maintenance activity of Owner resulting in such damage. Owner shall, within ten (10) business days from receiving notice of any such damage make all repairs. In the event Owner does not complete the repairs within ten (10) business days, Host shall have a right to make all repairs, and Owner shall reimburse Host for all costs related thereto incurred by Host within ten (10) days after presentation by Host to Owner of supporting documentation describing the work performed and the cost thereof.

8. GENERAL COVENANTS.

8.1 Owner's Covenants. As a material inducement to Host's execution and delivery of this Agreement, Owner covenants and agrees to the following:

(a) Health and Safety. Owner shall strictly comply with all applicable laws, statutes, rules, regulations and ordinances for the Premises (if any).

(b) Notice of Damage. Owner shall immediately notify Host of any matters it is aware of pertaining to any actual or potential damage to or loss of the use of the System or the Premises or that could reasonably be expected to adversely affect the System (or the operation of the System) or the Premises.

(c) Liens. Owner shall not directly or indirectly cause, create, incur, assume or suffer to exist any liens on or with respect to the Premises or any interest therein except that Owner may grant a lien on or security interest in its rights and interests in the Agreement for financing purposes. If Owner breaches its obligations under this Section, it shall promptly cause any liens to be discharged and released of record without cost to Host.

(d) Host's Reservation of Rights. Owner shall not inhibit Host from access to the Site.

8.2 Host's Covenants. As a material inducement to Owner's execution and delivery of this Agreement, Host covenants and agrees that it shall not alter, repair, modify or otherwise tamper or interfere with the System without the prior written consent of Owner.

9. REPRESENTATIONS AND WARRANTIES.

9.1 Warranties Relating to Agreement Validity. In addition to any other representations and warranties contained in this Agreement, each Party represents and warrants to the other as of the Effective Date that:

(a) it is duly organized and validly existing and in good standing in the jurisdiction of its organization;

(b) it has the full right and authority and has taken all requisite corporate or other action to enter into, execute, deliver, and perform its obligations under this Agreement;

(c) it has the financial resources necessary to perform its obligations under this Agreement;

(d) this Agreement constitutes its legal, valid and binding obligation enforceable against such Party in accordance with its terms;

(e) there is no litigation, action, proceeding or investigation pending or, to the best of its knowledge, threatened before any court or other governmental authority by, against, affecting or involving any of its business or assets that would affect its ability to carry out the transactions contemplated herein; and

(f) Neither the execution and delivery of this Agreement by such Party nor the performance by such Party of any of its obligations under this Agreement conflicts with or will result in a breach or default under any agreement or obligation to which such Party is a party or by which such Party is bound.

9.2 Owner's Warranties. Owner represents and warrants the following:

(a) Quality of Services. The Power Efficiency Services will be performed in a diligent and professional manner, in accordance with the highest industry standards by qualified workers experienced in performing the type of work specified herein.

(b) In Accordance with the Agreement. The Power Efficiency Services shall be performed strictly in accordance with the requirements of the Agreement.

(c) In Accordance with the Law. The Power Efficiency Services shall be performed strictly in accordance with all applicable laws, statutes, rules, regulations and ordinances for the Premises (if any).

(d) Licenses and Permits. Owner is licensed, if required by law, and bonded in the State in which the Power Efficiency Services are to be performed. Owner has and shall maintain all necessary permits and certifications required by any governmental authority to perform the Power Efficiency Services; such licenses, permits, governmental approvals and certifications will be maintained current and valid throughout the Term hereof.

(e) Intellectual Property. Owner is the lawful owner or licensee of all intellectual property used by Owner in the performance of the Power Efficiency Services. With respect to any application or hosted software that Owner uses in performing the Power Efficiency Services ("Software"), Owner warrants that: (a) Owner is the lawful owner or licensee of all Software and has the right to license

Host to use it; (b) all Software is free of any defect and computer virus and will function in accordance with its specifications; and (c) all Software that is to be delivered to or used by Host complies with Host's system development methodology and security requirements.

(f) Third Party. The Power Efficiency Services will violate or in any way infringe upon the rights of third parties, including proprietary information and non-disclosure rights, or any trademark, copyright or patent rights.

10. TAXES AND GOVERNMENTAL FEES.

Owner shall be responsible for paying and remitting all income, gross receipts, ad valorem, personal property or real property or other similar taxes and any and all franchise fees or similar fees assessed by a governmental authority against it due to its ownership of the System. If a tax is imposed upon Host related to the improvement of real property by the existence of the System on the Premises, Owner shall reimburse Host for such tax.

11. FORCE MAJEURE.

11.1 Excused Performance. Except as otherwise specifically provided in this Agreement, neither Party shall be considered in breach of this Agreement or liable for any delay or failure to comply with the Agreement, if and to the extent that such delay or failure is attributable to the occurrence of a Force Majeure Event; provided that the Party claiming relief under this Article 11 shall (a) as soon as practicable after occurrence of the claimed Force Majeure event notify the other Party in writing of the existence and nature of the Force Majeure Event, (b) promptly exercise all reasonable efforts necessary to minimize delay caused by such Force Majeure Event, (c) promptly notify the other Party in writing of the cessation or termination of said Force Majeure Event, and (d) resume performance of its obligations hereunder as soon as practicable thereafter. For the purposes hereof, a "Force Majeure Event" means the failure or interruption of the production, delivery, or acceptance of Power Efficiency Services resulting from any of the following events to the extent not caused by the Party claiming a Force Majeure Event: (a) war, riot, acts of a public enemy, insurrection, acts of terrorism, or civil disturbance; and (b) acts of God, including but not limited to storms, flood, lightening, earthquake, hailstorms, ice storms, tornados, hurricanes, landslides, fires (whether deliberately set or otherwise); and (c) Owner is required by Utility or local authority to stop operation of system.

11.2 Supplier Bankruptcy. Owner acquires equipment and components and relies upon warranties from suppliers. These suppliers are defined as battery and inverter manufacturers and may include other component manufacturers. Should a supplier be forced in to bankruptcy Owner may, by providing Host with thirty (30) day written notice, terminate this Agreement. Upon such termination, Owner shall immediately

restore the Premises to its original condition (other than ordinary wear and tear) at Owner's cost.

11.3 Consequence of Force Majeure Event. If the System is substantially damaged or destroyed by a Force Majeure Event, Owner shall elect, upon written notice to Host given within ten (10) days after receipt of notice of such substantial damage or destruction, to repair or replace the System and upon commencement of operation of the replacement System all terms and conditions of this Agreement shall remain in effect, including the remaining Term of this Agreement. Alternatively, if the System is substantially damaged or destroyed by a Force Majeure Event, Owner or Host may, by providing written notice to the other within twenty (20) days, terminate this Agreement without fault or liability to the other. Owner shall have fifteen (15) days after either giving or receiving notice of termination pursuant to this section to remove a damaged or destroyed System; otherwise, it shall be considered abandoned and Host may remove and dispose of the System pursuant to Section 1.2.

12. DEFAULT.

12.1 Owner Defaults and Host Remedies. The following events shall be defaults with respect to Owner (each, a "Provider Default"):

(a) A breach by Owner of a material term of this Agreement that remains uncured for fifteen (15) days after Host provided Owner with notice or a breach by Owner that by its nature may not be cured.

(b) If any representation or warranty of Owner proves at any time to have been incorrect in any material respect when made.

(c) In the event of an Owner Default, Host may, in addition to any other remedy available at law or in equity, immediately terminate this Agreement pursuant to Section 1.3(a) above.

12.2 Host Defaults and Owner Remedies. The occurrence of any of the following events shall be deemed a "Host Default" for purposes of this Agreement:

(a) Host breaches any material term of this Agreement; or

(b) Host fails to pay Owner any amount owing to Owner under this Agreement, including any Power Efficiency Fee, within fifteen (15) days of receiving written notice from Owner that such undisputed amount is past due.

In the event of a Host Default, Owner may, in addition to any other remedy available at law or in equity, terminate this Agreement pursuant to Section 1.4(a) above.

13. LIMITATION OF LIABILITY.

EXCEPT AS OTHERWISE PROVIDED HEREIN, FOR BREACHES OF CONFIDENTIALITY OBLIGATIONS, FOR VIOLATION OF ANY APPLICABLE LAW BY OWNER OR ITS SUBCONTRACTORS, AND TO THE EXTENT ASSERTED BY A THIRD PARTY AS PART OF A CLAIM COVERED BY THE INDEMNIFICATION OBLIGATIONS OF SECTION 16, NEITHER PARTY SHALL BE LIABLE TO THE OTHER PARTY OR ITS INDEMNIFIED PERSONS FOR ANY INDIRECT, PUNITIVE OR EXEMPLARY DAMAGES ARISING OUT OF, OR IN CONNECTION WITH THIS AGREEMENT.

EACH PARTY'S TOTAL LIABILITY FOR ANY AND ALL LIABILITY TO THE OTHER PARTY AND TO SUCH OTHER PARTY'S SUBCONTRACTORS OR AFFILIATES OR THEIR RESPECTIVE REPRESENTATIVES, AGENTS, OFFICERS, DIRECTORS, SHAREHOLDERS, PARTNERS, ELECTED OFFICIALS OR EMPLOYEES (ON AN AGGREGATE BASIS) ARISING OUT OF OR IN CONNECTION THIS AGREEMENT WHETHER IN CONTRACT OR IN TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) SHALL NOT EXCEED ONE MILLION DOLLARS ($1,000,000.00).

14. ASSIGNMENT.

14.1 Except as provided in Sections 14.2 and 14.3 below, this Agreement may not be assigned in whole or in part by either Party without the prior written consent of the other Party, which consent shall not be unreasonably withheld or delayed. This Agreement shall be binding on and inure to the benefit of the successors and permitted assignees. Any prohibited assignment is void.

14.2 Owner's Rights.

(a) Notwithstanding anything to the contrary in Section 14.1, Owner may assign or subcontract any of the terms or obligations under this Agreement. Host acknowledges and agrees that Owner intends to assign and subcontract certain of its rights and obligations under this Agreement, including relating to construction, installation, testing, operation and maintenance, and a sublease of its rights to the Site for such purposes; Host hereby consents to such assignment, subcontracting. Owner shall be entitled to, and is hereby authorized to, file one or more precautionary UCC Financing Statements or fixture filings, as applicable, in such jurisdictions as it deems appropriate with respect to the Systems in order to protect its rights in the Systems, provided, however, in no event shall Owner be permitted to make any filings that would be an encumbrance on title to the real property on which the System is situated.

14.3 Host's Rights.

(a) Host may assign its rights and interests in and to this Agreement to any successor owner or person lawfully occupying the Premises, provided that any such assignee shall agree in writing to be bound by the terms of this Agreement.

(b) Notwithstanding anything to the contrary in Section 19.1, Purchaser shall have the right without any requirement to obtain consent hereunder, to assign this Agreement to a subsidiary or affiliate, or a successor by merger, acquisition or consolidation, or to an acquirer of all or substantially all of the assets of Purchaser, its subsidiary or affiliate.

15.CONFIDENTIALITY.

15.1 Confidential Information. If either Party provides confidential information, including, without limitation, business plans, strategies, financial information, proprietary, patented, licensed, copyrighted or trademarked information, and/or technical information regarding the design, operation and maintenance of the System or of Host's business ("Confidential Information") to the other, or, if in the course of performing under this Agreement or negotiating this Agreement a Party learns Confidential Information regarding the facilities or plans of the other, the receiving Party shall (a) protect the Confidential Information from disclosure to third parties with the same degree of care accorded its own confidential and proprietary information, and (b) to the extent permitted by law, refrain from using such Confidential Information, except to the extent necessary in the negotiation and performance of this Agreement. A Party may provide such Confidential Information to its, officers, directors, members, managers, elected officials, employees, agents, contractors and consultants (collectively, "Representatives"), and affiliates, lenders, investors, potential lenders, potential investors and potential assignees of this Agreement (provided and on condition that such potential lenders, potential investors and potential assignees agree in writing to be bound by the terms of this Section 15), in each case whose access is reasonable only to the extent necessary to the negotiation and performance of this Agreement, the financing of the System or the sale of any interest in Owner. In any event, except where disclosure was required by law, each Party shall be liable (with respect to the other Party) for any breach of this provision by any entity to whom that Party improperly discloses Confidential Information. The terms of this Agreement (but not its execution or existence) shall be considered Confidential Information for purposes of this Section 15, except as set forth in Section 15.2. All Confidential Information shall remain the property of the disclosing Party and, except where retention is required by law, shall be returned to the disclosing Party or destroyed after the receiving Party's need for it has expired or upon the request of the disclosing Party. Each Party agrees that the disclosing Party would be irreparably injured by a breach of this Section 15.1 by the receiving Party or its Representatives or other person to whom the receiving Party discloses Confidential Information of the disclosing Party and that the disclosing Party may be entitled to equitable relief, including injunctive relief and specific performance, in the event of a breach of the provision of this Section 15.1. To the fullest extent permitted by applicable law, such remedies shall not be deemed to be the exclusive remedies for a breach of this Section 15.1, but shall be in addition to all other remedies available at law or in equity.

15.2 Permitted Disclosures. Notwithstanding any other provision in this Agreement, neither Party shall be required to hold confidential any information that:

(a) becomes publicly available other than through the receiving Party;

(b) is required to be disclosed by it or its affiliates pursuant to applicable law or regulation, a subpoena or order of a court, or for evidentiary purposes in any relevant action, proceeding or arbitration to which the receiving Party or any of its partners, officers, directors, shareholders or affiliates is a party; provided in the event that the receiving Party receives a request to disclose any Confidential Information under such subpoena, order or otherwise, the Party receiving the subpoena or court order shall, to the extent permitted by applicable law: (i) promptly notify the other Party thereof, (ii) consult with the other Party on the advisability of taking steps to resist or narrow such request, and (iii) if disclosure is required, reasonably cooperate with the other Party in any attempt that it may make to obtain an order or other reliable assurance that confidential treatment will be accorded to the Confidential Information. Any such efforts shall be at the sole cost of the Party wishing to prevent or limit disclosure of the Confidential Information;

(c) is independently developed by the receiving Party; or

(d) becomes available to the receiving Party without restriction from a third party under no obligation of confidentiality.

16.INDEMNIFICATION AND LIEN WAIVER.

16.1 Each Party shall defend, indemnify and hold harmless (the "Indemnifying Party") the other Party, its successors and assigns and their respective directors, officers, members, shareholders, contractors and employees (collectively, the "Indemnified Parties") from and against any and all Losses incurred by the Indemnified Parties to the extent caused by the following: (i) any breach by a Party of its representations, warranties, or obligations under this Agreement, (ii) any claim asserted by a third party, including, but not limited to, any claim for injury to or death of any person or loss or damage to property, due to the acts or omissions of the Indemnifying Party (or its contractors, agents or employees). The Parties shall not, however, be required to reimburse or indemnify any Indemnified Party for any Loss to the extent such Loss is caused by the negligence or willful misconduct of any Indemnified Party or the Indemnified Parties conduct in breach of this Agreement. For the purposes hereof, the term "Loss" means any penalties, obligations, damages, losses, liabilities, payments, costs and expenses. The provisions of this Section 16.1 shall survive the expiration or termination of this Agreement.

ANYTHING IN THIS AGREEMENT TO THE CONTRARY NOTWITHSTANDING, EACH PARTY HEREBY WAIVES EVERY RIGHT OR CAUSE OF ACTION FOR ANY AND ALL LOSS OF, OR DAMAGE TO (WHETHER OR NOT SUCH LOSS OR DAMAGE IS CAUSED BY THE FAULT OR NEGLIGENCE OF THE OTHER PARTY OR ANYONE FOR WHOM SAID OTHER PARTY MAY BE RESPONSIBLE) THE PREMISES, THE SYSTEM OR ANY IMPROVEMENTS ON ANY OF THE FOREGOING, OR TO THE PERSONAL PROPERTY

OF EITHER PARTY, OR THEIR RESPECTIVE AFFILIATES, REPRESENTATIVES, AGENTS, OFFICERS, DIRECTORS, MANAGERS, MEMBERS, SHAREHOLDERS, PARTNERS, CONTRACTORS, SUBCONTRACTORS, ELECTED OFFICIALS OR EMPLOYEES, REGARDLESS OF CAUSE OR ORIGIN. THESE WAIVERS AND RELEASES SHALL APPLY BETWEEN THE PARTIES, AND FOR THE BENEFIT OF THEIR CONTRACTORS AND SUBCONTRACTORS, AND THEY SHALL ALSO APPLY TO ANY CLAIMS UNDER OR THROUGH EITHER PARTY AS A RESULT OF ANY ASSERTED RIGHT OF SUBROGATION.

16.2 Lien Waiver. Owner shall pay when due all valid charges from all contractors, subcontractors and suppliers supplying goods or services to Owner under this Agreement and shall keep the Premises free and clear of any liens related to such charges. Owner shall indemnify Host for all claims, losses, damages, liabilities and expenses resulting from any liens filed against the Premises in connection with such charges; provided, however, that Owner shall have the right to contest any such lien, so long as it provides a statutory bond or other reasonable assurances of payment that either remove such lien from title to the Premises or that assure that any adverse judgment with respect to such lien will be paid without affecting title to the Premises.

17.INSURANCE. Owner, at its own expense, shall provide and maintain insurance coverage during the complete term of the Agreement that conforms in all material respects with the following requirements:

17.1 Workers' Compensation and Employer's Liability Insurance. Statutory Workers' Compensation coverage for all of its employees, including occupational disease coverage, as required by applicable law, and employer's liability with limits of at least $1,000,000 bodily injury each accident, $1,000,000 bodily injury by disease per employee, and $1,000,000 bodily injury by disease in the aggregate.

17.2 Commercial General Liability Insurance. Commercial General Liability Insurance written on an "occurrence" basis with a combined single limit of at least $1,000,000 per occurrence and $2,000,000 in the aggregate, including bodily injury, hazards of operation, broad form property damage liability coverage, products/completed operations coverage, independent contractor coverage and broad form contractual coverage for liability assumed under the Agreement, to the extent insurable under the policy. Coverage shall include liability arising out of acts of agents or contractors of Owner.

17.3 Automobile Liability Insurance. Coverage for all motor vehicles operated by or for Owner, including protection for automobiles and trucks used by Owner either on or away from the sites at which work is being performed, with a combined single limit of at least $1,000,000 per occurrence for bodily injury and property damage. The policy shall include coverage for all hired, owned and non-owned vehicles.

17.4 Insurance Requirements Applicable to Contractors. Owner shall require each of its contractors to maintain policies of insurance of the types described above with insurance limits as are customary for the industry in which each such contractor operates and coverage limits as are commercially reasonable given the nature of the work to be provided by such contractor.

17.5 Policy Provisions. Owner agrees that it will maintain insurance to cover any indemnity obligation that it has assumed under this Agreement. All policies will be primary and at Owner's sole expense. Host will be included as an additional insured on all coverage listed above with the exception of Workers' Compensation, Employer's Liability, Property, and Professional Liability. All workers compensation, general liability, and auto liability insurance policies will include provisions that the insurers waive the rights of recovery or subrogation against Host. Insurance coverage will be in a form and carrier acceptable to Host with a minimum A.M. Best rating of A-/VII or higher. The insolvency, bankruptcy or failure of any insurance company shall not relieve Owner of any of its obligations herein. Within two (2) days of a request by Host, Owner shall provide certificates of insurance including additional insured endorsements.

17.6 Certificates. A certificate of insurance evidencing the above must be presented and satisfactory to Host prior to commencement of the Power Efficiency Services. Owner must provide thirty (30) days notice to Host in the event of cancellation of such coverage and ten (10) days notice in the event of non-payment of premium; and, Owner shall notify Host in the event of material change or cancellation.

18. NOTICES

Any notices, bills, invoices, or reports required by this Agreement shall be deemed received on: (i) the day of delivery if delivered by hand, facsimile or overnight courier service during Owner's and Host's regular business hours; or (ii) on the third business day following deposit in the United States mail if delivered by mail, postage prepaid, to the addresses listed below (or to such other addresses as the parties may, from time to time, designate in writing) or (iii) via facsimile or e-mail (which e-mail shall state in bold, capital letters in the reference line that this is an official notice provided under Section 18 of the Power Efficiency Agreement).

If to Host:

Name: Tony Knight
5801 Conifer Street,
Oak Park, CA 91377
Fax:

If to Owner:

Green Charge Networks
Attn: Legal Department
309 Laurelwood Road
Suite 24
Santa Clara, CA 95054
Fax: _____

19. MISCELLANEOUS.

19.1 Integration; Exhibits. This Agreement, together with any Exhibits and Schedules attached hereto, constitutes the entire agreement and understanding between Owner and Host with respect to the subject matter hereof and supersedes all prior agreements relating to the subject matter hereof, which are of no further force or effect.

19.2 Cumulative Remedies. Except as set forth to the contrary herein, any right or remedy of Owner or Host shall be cumulative and without prejudice to any other right or remedy, whether contained herein or not.

19.3 Limited Effect of Waiver. The failure of Owner or Host to enforce any of the provisions of this Agreement, or the waiver thereof, shall not be construed as a general waiver or relinquishment on its part of any such provision, in any other instance or of any other provision in any instance.

19.4 Changes and Modifications to the Agreement. Any modification, alteration or change to this Agreement shall be made only by written amendments executed by the Parties.

19.5 Governing Law Provision: The validity of the Agreement and any of its terms or provisions, as well as the rights and duties of the parties to this Agreement, shall be governed by, and construed in accordance with, the laws of the State of California, without giving effect to conflict of laws principles. Each Party irrevocably agrees that any legal action, suit or proceeding brought by it that in any way arises out of the Agreement ("Proceeding") must be litigated exclusively in the State of California.

19.6 Severability. If any term, covenant or condition in this Agreement shall, to any extent, be invalid or unenforceable in any respect under Applicable Law, the remainder of this Agreement shall not be affected thereby, and each term, covenant or condition of this Agreement shall be valid and enforceable to the fullest extent permitted by applicable law.

19.7 Successors and Assigns. This Agreement and the rights and obligations under this Agreement shall be binding upon and shall inure to the benefit of Owner and Host and their respective permitted successors and assigns.

19.8 Survival. Provisions of this Agreement that should reasonably be considered to survive termination of this Agreement shall survive.

19.9 No Partnership. No provision of this Agreement shall be construed or represented as creating a partnership, trust, joint venture, fiduciary or any similar relationship between the Parties. No Party is authorized to act on behalf of the other Party, and neither shall be considered the agent of the other.

19.10 No Third Party Beneficiaries. Except as otherwise expressly provided herein, this Agreement and all rights hereunder are intended for the sole benefit of the Parties hereto and shall not imply or create any rights on the part of, or obligations to, any other Person.

19.11 Counterparts. This Agreement may be executed in any number of counterparts, each of which may be delivered by facsimile transmission or electronically in .PDF format and each of which shall be an original but all of which together will constitute one instrument, binding upon all parties hereto, notwithstanding that all of such parties may not have executed the same counterpart.

[Signature page follows]

IN WITNESS WHEREOF and in confirmation of their consent to the terms and conditions contained in this Agreement and intending to be legally bound hereby, Owner and Host have executed this Agreement as of the Effective Date.

HOST: Oak Park Unified School District

By: _____
Name: Anthony Knight
Title: Superintendent

OWNER:

GREEN CHARGE NETWORKS, LLC

By: _____
Name: Vic Shao
Title: Chief Executive Officer

EXHIBIT A

Site Locations

System Location	System Size	PEA Split to host	Total Annual savings
Brookside Elementry	60kW/60kWh	25%	$7,731
Medea Creek Middle School	60kW/60kWh	25%	$10,547
Oak Pak High School	60kW/60kWh	25%	$11,499

EXHIBIT B

[System –Specifications]

To be added later

EXHIBIT C

[Annual Demand Charge Reduction Savings]

System Location	First Year Annual savings
Brookside Elementry	$7,731
Medea Creek Middle School	$10,547
Oak Pak High School	$11,499

Intelligent Energy Storage

Oak Park
UNIFIED SCHOOL DISTRICT

green charge networks
GreenChargeNet.com

EV and Storage

- CA program to install EV charging and Storage
- No cost or O&M to District
- Install a 60kw/60kwh energy storage system
- Install a Nissan DC fast charger or Level 2 chargers
- Employee discount program for new Nissan Cars
- School reimbursed for Electricity

GCN System

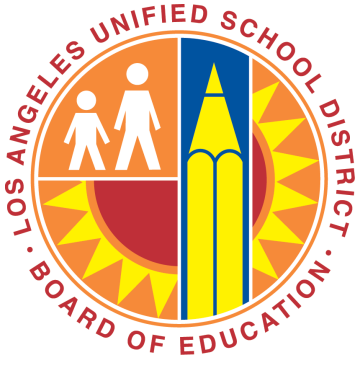
Green Charge Networks -integrates sophisticated power electronics with battery storage to reduce peak demand costs

Green Station 2.0 – Intelligent energy storage and enterprise data analytics. Comes in a 30kW/ 30kWh building blocks

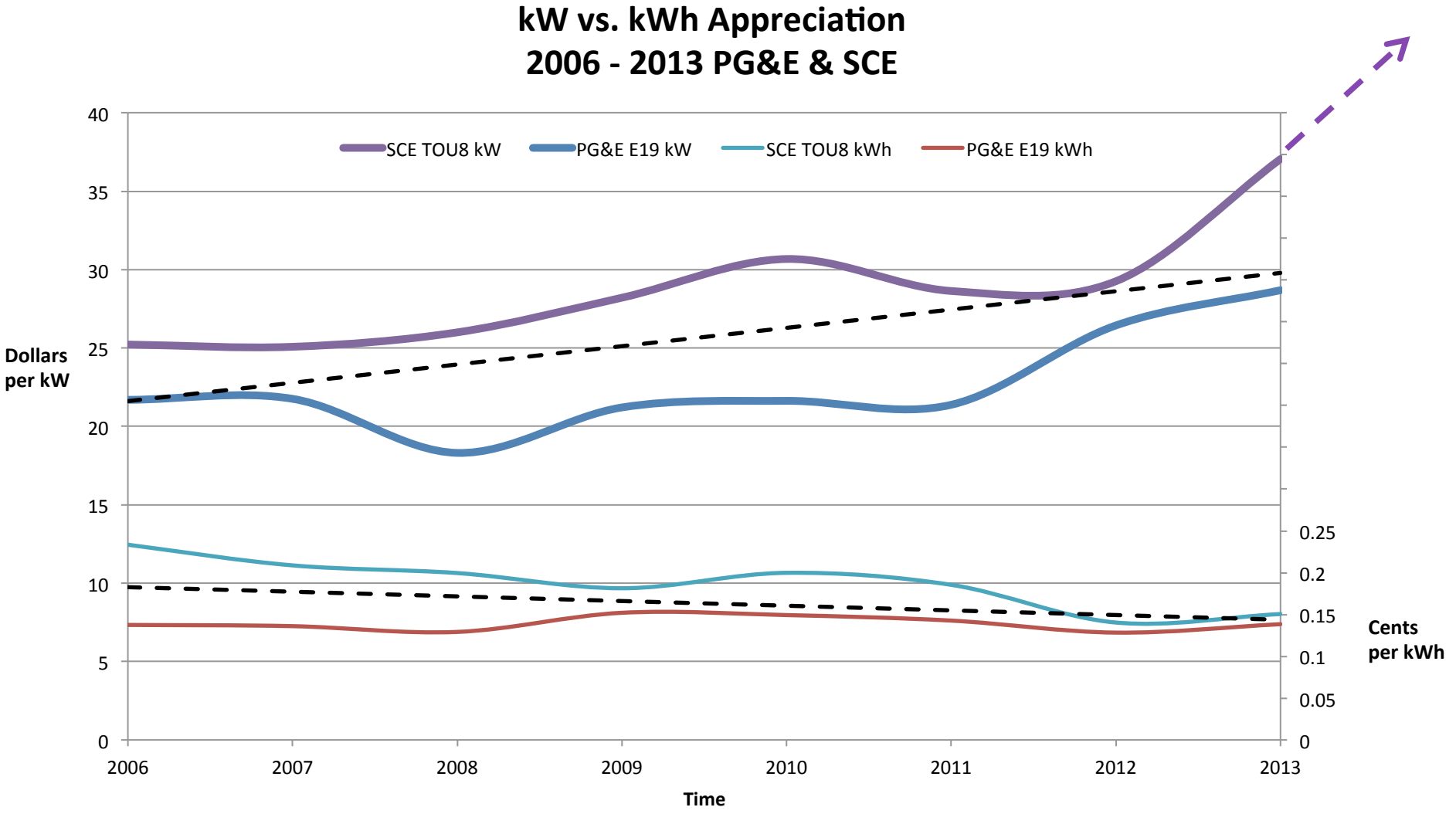
Green Synergy Client – Advanced data algorithms, reporting and savings analysis

green charge networks

Who we work with



Rising Demand Charges



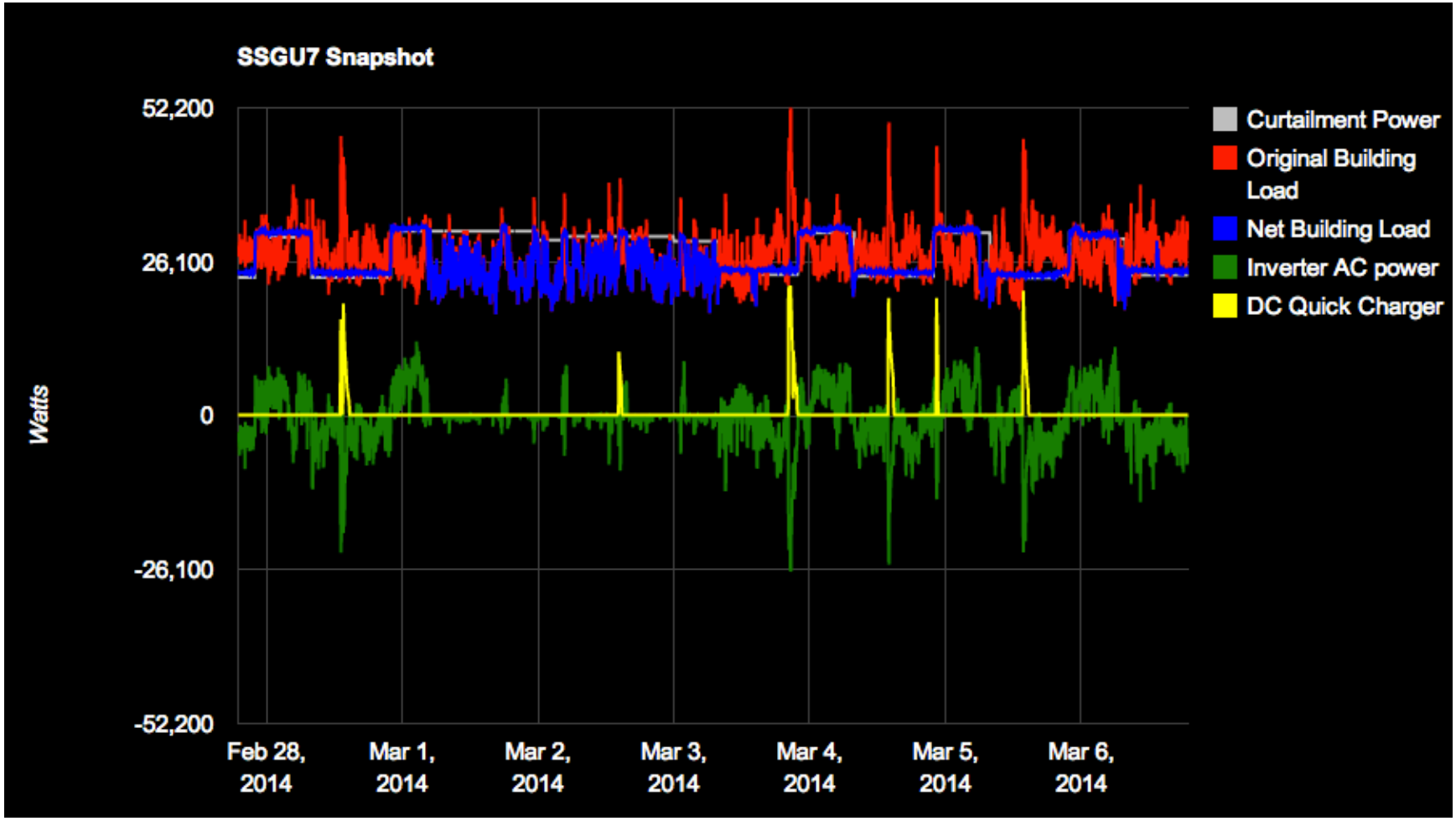
Best of Breed Technology

IDEAL POWER

SAMSUNG

PRINCETON POWER SYSTEMS

GCN at Work


SSGU7 Snapshot
52,200
26,100
0
-26,100
-52,200
Watts
Feb 28, 2014
Mar 1, 2014
Mar 2, 2014
Mar 3, 2014
Mar 4, 2014
Mar 5, 2014
Mar 6, 2014
Curtailment Power
Original Building Load
Net Building Load
Inverter AC power
DC Quick Charger

Financial Overview

- Analyzed savings based on demand profile and tariffs
- Oak Park USD get 25% of the annual savings

- **Brookside Elementary School**
  - 60kW/60kWh system
  - Annual savings of $7,731*
- **Medea Creek Middle School**
  - 60kW/60kWh energy storage system & Level III EV Charger
  - Annual savings of $10,547*
- **Oak Park High School**
  - 60kW/60kWh energy storage system & Level III EV Charger
  - Annual Savings of $11,499

- **Combined PEA savings**
  - First year savings of $7,444*
  - Over $93,634 for term*

No Cost Solutions

- Power Efficiency Agreements
  - Like a PPA for solar
  - 25% savings in demand charges
  - No cost to Host
  - No performance risk
  - O&M included

	System Size	EV Charger	Split	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Brookside ES	60 kW	No	25%	$1,933	$2,029	$2,131	$2,237	$2,349	$2,467	$2,590	$2,720	$2,856	$2,998
Medea Creek MS	60 kW	Yes	25%	$2,637	$2,769	$2,907	$3,052	$3,205	$3,365	$3,534	$3,710	$3,896	$4,091
Oak Park HS	60 kW	Yes	25%	$2,875	$3,019	$3,169	$3,328	$3,494	$3,669	$3,853	$4,045	$4,247	$4,460
Annual Total	**180 kW**	-	25%	$7,444	$7,817	$8,207	$8,618	$9,049	$9,501	$9,976	$10,475	$10,999	$11,549
Cumulative Total	-	-	**25%**	**$7,444**	**$15,261**	**$23,468**	**$32,086**	**$41,135**	**$50,636**	**$60,612**	**$71,087**	**$82,086**	**$93,634**

* Savings are de-rated by 10%.

Terms of Program

- GCN is the owner and operator of the energy storage system
- GCN will donate the EV chargers to the district after installation
- District will utilize the same ChargePoint program as on their existing EV Chargers
- 10 Year term
- GCN will be responsible for removing equipment at the end of the term

Storage and EV

Redwood City Downtown Parking Garage

Redwood City Library

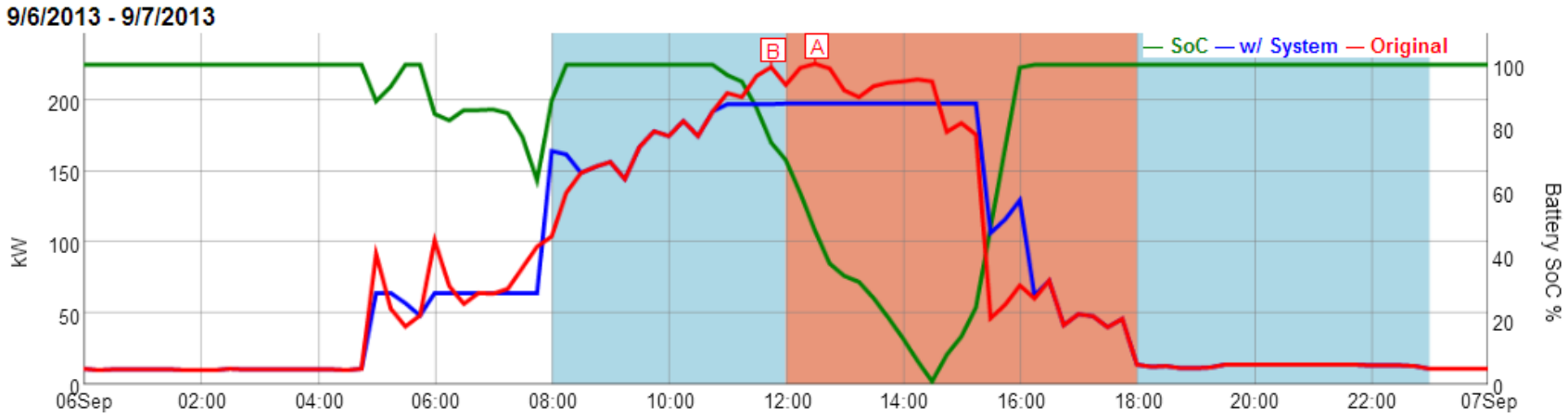
Redwood City Library

49 Stadium

Brand new 49er Stadium
Santa Clara, CA
Goal: PV Integration and EV charging

Back up slides

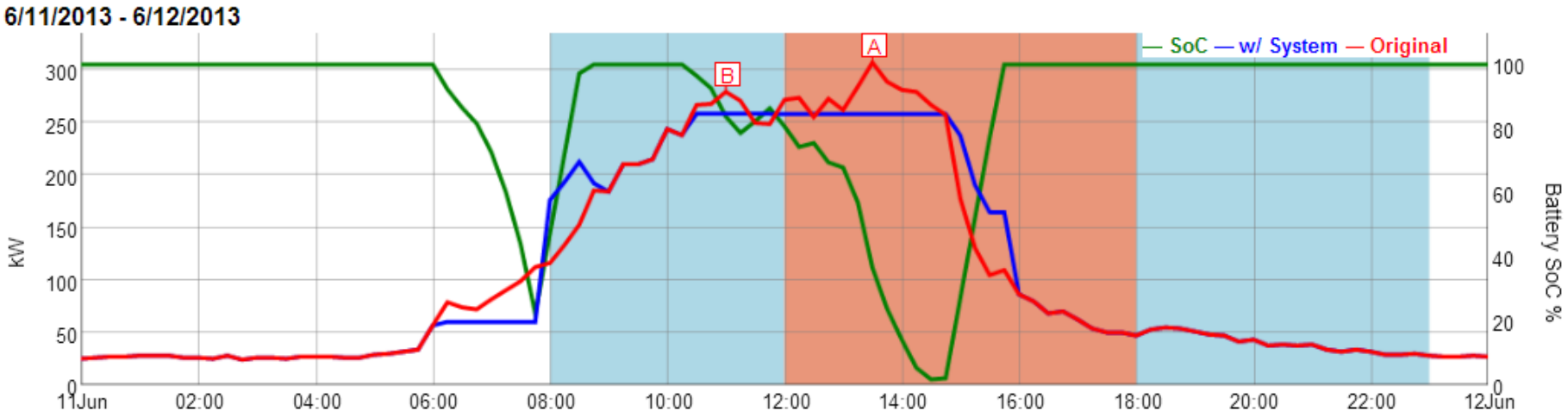
Brookside Load Profile



Brookside Demand Savings

Billing End	On Peak				Partial Peak				Maximum Daily Peak				Monthly Savings
	Max Demand (kW)	SetPoint (kW)	Demand Shaved (kW)	Tariff ($/ kW)	Max Demand (kW)	SetPoint (kW)	Demand Shaved (kW)	Tariff ($/ kW)	Max Demand (kW)	SetPoint (kW)	Demand Shaved (kW)	Tariff ($/ kW)	
3/1/2013									138	104	34	$15.77	**$536**
4/1/2013									146	115	31	$15.77	**$489**
5/1/2013									157	118	39	$15.77	**$615**
6/1/2013									222	187	35	$15.77	**$552**
7/1/2013	165	138	27	$20.50	163	137	26	$6.01	165	138	27	$15.77	**$1,136**
8/1/2013	68	42	26	$20.50	64	43	21	$6.01	68	43	25	$15.77	**$1,051**
9/1/2013	216	191	25	$20.50	209	190	19	$6.01	216	191	25	$15.77	**$1,021**
10/1/2013	226	198	28	$20.50	223	197	26	$6.01	226	198	28	$15.77	**$1,172**
11/1/2013									157	125	32	$15.77	**$505**
12/1/2013									161	123	38	$15.77	**$599**
1/1/2014									130	104	26	$15.77	**$410**
1/30/2014									139	107	32	$15.77	**$505**
											Total 12-Month Savings:		**$8,590**

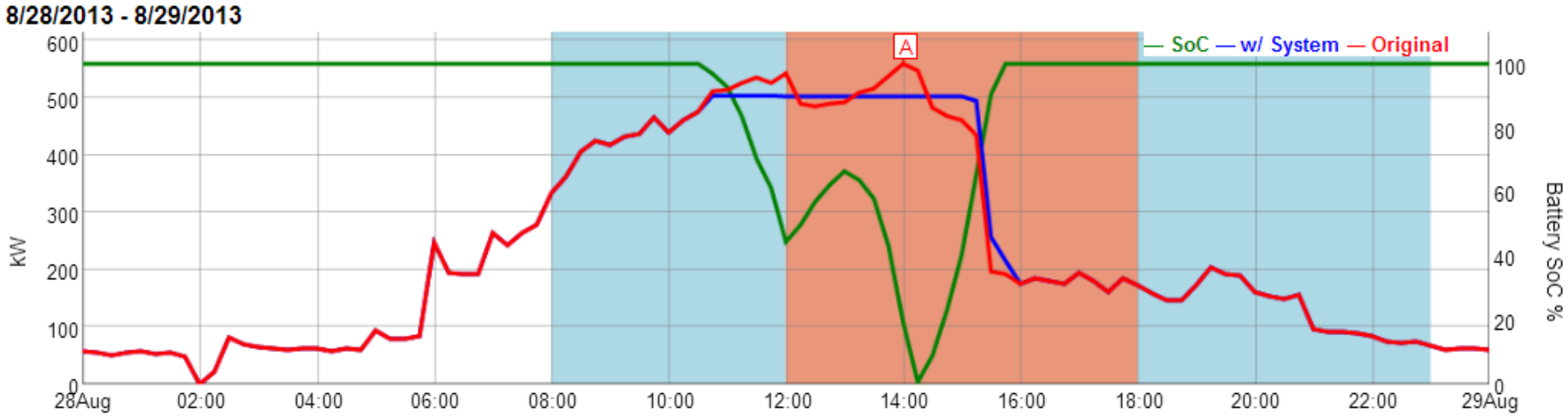
Medea Creek Load Profile



Medea Creek

Billing End	On Peak				Partial Peak				Maximum Daily Peak				Monthly Savings
	Max Demand (kW)	SetPoint (kW)	Demand Shaved (kW)	Tariff ($/ kW)	Max Demand (kW)	SetPoint (kW)	Demand Shaved (kW)	Tariff ($/ kW)	Max Demand (kW)	SetPoint (kW)	Demand Shaved (kW)	Tariff ($/ kW)	
3/1/2013									212	177	35	$15.77	**$552**
4/1/2013									294	253	41	$15.77	**$647**
5/1/2013									269	217	52	$15.77	**$820**
6/1/2013									377	328	49	$15.77	**$773**
7/1/2013	307	258	49	$20.50	279	258	21	$6.01	307	258	49	$15.77	**$1,901**
8/1/2013	203	159	44	$20.50	191	160	31	$6.01	203	160	43	$15.77	**$1,759**
9/1/2013	409	377	32	$20.50	407	376	31	$6.01	409	377	32	$15.77	**$1,347**
10/1/2013	408	366	42	$20.50	394	365	29	$6.01	408	366	42	$15.77	**$1,698**
11/1/2013									291	248	43	$15.77	**$678**
12/1/2013									300	265	35	$15.77	**$552**
1/1/2014									240	205	35	$15.77	**$552**
1/30/2014									248	220	28	$15.77	**$442**
												Total 12-Month Savings:	**$11,719**

Oak Park HS Load Profile



Oak Park HS

Billing End	On Peak				Partial Peak				Maximum Daily Peak				Monthly Savings
	Max Demand (kW)	SetPoint (kW)	Demand Shaved (kW)	Tariff ($/ kW)	Max Demand (kW)	SetPoint (kW)	Demand Shaved (kW)	Tariff ($/ kW)	Max Demand (kW)	SetPoint (kW)	Demand Shaved (kW)	Tariff ($/ kW)	
3/1/2013									305	266	39	$14.99	**$585**
4/1/2013									372	324	48	$14.99	**$720**
5/1/2013									334	293	41	$14.99	**$615**
6/1/2013									526	479	47	$14.99	**$705**
7/1/2013	389	353	36	$25.33	384	352	32	$7.16	389	353	36	$14.99	**$1,681**
8/1/2013	230	190	40	$25.33	228	198	30	$7.16	230	198	32	$14.99	**$1,714**
9/1/2013	559	502	57	$25.33	550	504	46	$7.16	559	504	56	$14.99	**$2,607**
10/1/2013	547	506	41	$25.33	530	507	23	$7.16	547	507	40	$14.99	**$1,800**
11/1/2013									389	352	37	$14.99	**$555**
12/1/2013									389	345	44	$14.99	**$660**
1/1/2014									324	290	34	$14.99	**$510**
1/30/2014									343	301	42	$14.99	**$630**
												Total 12-Month Savings:	**$12,777**

No Cost Solutions

- Power Efficiency Agreements
  - Like a PPA for solar
  - 25% savings in demand charges
  - No cost to Host
  - No performance risk
  - O&M included

	System Size	EV Charger	Split	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Brookside ES	60 kW	No	25%	$1,933	$2,029	$2,131	$2,237	$2,349	$2,467	$2,590	$2,720	$2,856	$2,998
Medea Creek MS	60 kW	Yes	25%	$2,637	$2,769	$2,907	$3,052	$3,205	$3,365	$3,534	$3,710	$3,896	$4,091
Oak Park HS	60 kW	Yes	25%	$2,875	$3,019	$3,169	$3,328	$3,494	$3,669	$3,853	$4,045	$4,247	$4,460
Annual Total	**180 kW**	-	25%	$7,444	$7,817	$8,207	$8,618	$9,049	$9,501	$9,976	$10,475	$10,999	$11,549
Cumulative Total	-	-	**25%**	**$7,444**	**$15,261**	**$23,468**	**$32,086**	**$41,135**	**$50,636**	**$60,612**	**$71,087**	**$82,086**	**$93,634**

* Savings are de-rated by 10%.

Intelligent Energy storage

- Average ROI is 2-5 years
- Subsidizes solar projects
- Works in parallel with energy efficiency and demand response measures
- Hedge against rising demand charges
- Complementary with on site solar
- Requires no behavioral changes or training
- 10 year warranty

Next steps

- Financial review
- Site evaluation
- SGIP Application
- Internal approval

Contact Info

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TO: **MEMBERS, BOARD OF EDUCATION**

FROM: **DR. ANTHONY W. KNIGHT, SUPERINTENDENT**

DATE: **JUNE 24, 2014**

SUBJECT: **5. TECHNOLOGY ROAD MAP PROGRESS REPORT AND AUTHORIZATION TO PROCEED WITH SUMMER 2014 PROJECTS**

ACTION

ISSUE: Shall the Board receive a progress report on educational technology and reaffirm and authorize technology purchases for the summer of 2014 in accordance with the Technology Expenditures Roadmap approved in September 2013, to be paid from the Measure C6 bond fund?

BACKGROUND: In September 2013, the OPUSD Governing Board approved a Technology Expenditures Roadmap that laid out the rationale, estimated costs, and proposed timeline for technology expenditures over the forthcoming years. With the 2013-14 school year now complete and multiple major technology infrastructure projects underway, staff has prepared the attached progress report for the Board's information. The Governing Board is also being asked to reaffirm and authorize technology purchases to occur over the summer of 2014 in accordance with the Technology Expenditures Roadmap approved in September 2013. The list of proposed expenditures, to be paid from the Measure C6 bond fund, is attached for the Board's review.

ALTERNATIVES:

1. Reaffirm and authorize technology purchases to occur over the summer of 2014 in accordance with the Technology Expenditures Roadmap approved in September 2013, to be paid from the Measure C6 bond fund.
2. Do not approve the technology purchases.

RECOMMENDATION: Alternative No. 1

Prepared by: Enoch Kwok, Director, Educational Technology and Information Services
Martin Klauss, Assistant Superintendent, Business and Administrative Services

Respectfully submitted,

Anthony W. Knight, Ed.D.
Superintendent

Board Action: On motion of _____, seconded by _____, the Board of Education:

VOTE:	AYES	NOES	ABSTAIN	ABSENT
Laifman	_____	_____	_____	_____
Pallant	_____	_____	_____	_____
Rosen	_____	_____	_____	_____
Yeoh	_____	_____	_____	_____

OPUSD Technology Implementation Year In Review

Presented by Enoch Kwok, Director of Technology
Board Meeting June 24, 2014

In September 2013, the OPUSD Governing Board approved a Technology Expenditures Roadmap which laid out the rationale, estimated costs, and proposed timeline for Technology expenditures over the forthcoming years. Now that the school year is completed and several major technology infrastructure projects have been awarded to the best proposals received, it is a good time to take a look at the progress made along the aforementioned roadmap during the 2013-14 school year. The Governing Board is also being asked to approve additional technology purchases to take place over the summer of 2014 in accordance with the Technology Expenditures Roadmap approved in September 2013.

iPads: 1022 Apple iPads acquired in 2013-14 along with associated peripherals

- $750,000 expenditures in 2013-14 (Roadmap estimated $1.5 million to get to 1500-2000 iPads over 3 years)
- iPads for teacher iPads, Learning centers, and mobile carts
- Peripherals and administrative, support computers/servers
- $130,000 expenditures in 2012-13 for initial iPad purchase for a total of $880,000 spent so far on iPad deployments 2012-2014.

Wired Network: 49 Cisco network switches (5 core and 44 edge switches)

- $450,000 expenditures ($335,000 for HW and installation, $115,000 for 5 year management, monitoring and support costs) Roadmap estimated $300,000 acquisition cost for switches.
- New switches will service new Wireless network allowing existing switches to be repurposed for security cameras, VOIP telephony, building electrical monitoring, Thermostat monitoring, etc. All switches have been installed and configured.

Wireless Network: Ruckus Wireless (170 wireless access points)

- $ 180,000 authorized expenditures ($ 162,000 for HW and installation, $18,000 for managed services and support) Roadmap estimated $300,000
- Ruckus performed better than Cisco wireless for high-density iPad usage during district tests, and came in 40% lower than Cisco's cost.
- Design uses 802.11ac wave 1 access points, the latest technology available, although a better, more desirable "wave 2" design access points will become available in 2016 and may be considered for high traffic/high density locations in the district.
- Installation estimated to be completed by August 15, 2014

VOIP Telephony: Jive Hosted VOIP Telephone Service (329 Polycomm handsets)

- $14,000 in one time costs, $3000 ongoing monthly costs (Roadmap estimated $275,000 acquisition costs)
- Jive hosted VOIP solution means district does not have to purchase and maintain expensive on-premise telephone system, since all management is done remotely through web browser.
- Jive won the state master contract (CALNET3) allowing for 50% savings on top of 40% savings from Federal ERATE discounts resulting in a very low ongoing monthly operating cost (equivalent to current expenditures on the district's telephone system).
- Installation estimated to be completed in August 2014

Video Surveillance: Avigilon (104 Security Cameras)

- $267,000 authorized expenditures ($195,000 for HW and installation, $72,000 for 5 year maintenance and service) Roadmap estimated $350,000 total cost.
- Installation estimated to be completed by August 15, 2014
- Avigilon was the only provider with good iPad integration and built-in Infrared illuminators allowing cameras to "see" in the dark without additional lights. District retained the services of a security camera consultant who assisted in preparing scopes of work and evaluating proposals.

Network Cabling: new network cabling district wide reaches every classroom

- $91,000 authorized expenditures
- 3 projects serviced by new cabling: Wireless Access Points (71% or $65k), Security Cameras (24% or $22k), Building energy monitoring (4% or $4k).
- Installation of network cabling is estimated to be completed by August 15, 2014

Additional Technology projects for summer 2014: Governing Board approval is being sought to continue the following on-going technology programs and priorities:

21st Century Classroom: Finish upgrading/retrofitting all classrooms to current SMARTboards.

- Requesting $**150,000** for completing 21st CC upgrades to all classrooms ($100,000 for 21 new SMARTboards, $50,000 for upgrading 25 remaining 1st gen SMARTboard projectors to more reliable model. Roadmap estimated $100,000 to furnish remaining classrooms with SMARTboards.
- 1st Gen SMARTboard projectors are failing (8 years old) at an alarming rate and manufacturer has admitted a design flaw and is allowing a reduced upgrade cost to change out the 1st gen projectors with more reliable models. Most of the district's 1st gen projectors have already been switched out for newer more reliable models. Only 25 of the 1st gen are left.
- After this project, the 21st Century Classroom program will be considered complete, as all classrooms in the district will be equipped with SMARTboard technology.

District Network Server Upgrade: Two Active Directory network domain controllers

- $**50,000** estimated cost. Roadmap estimated $45,000.
- Current system relies on a single server at District Office. New system would have fail over redundancy with one AD Server at the District Office and one at OPHS. New system could better handle increased devices and traffic on network, alleviating congestion issues particularly at OPHS.
- With both AD Servers acting in concert, a power outage or server failure at one site (DO or OPHS) would not affect the rest of the district's ability to access the network and work on files stored on the server.
- $**12,000** requested for two additional Cisco switches to service the new portables at High School and the relocated portables for OPIS.

Computer Refresh: Refreshing desktops and laptops that are 7-8 years old, purchasing additional computers for new programs

- $**225,000** estimated cost for refresh and replenishment of stock covering approximately 140 computers: Roadmap estimated $360,000 over several years for computer refresh
- Oldest iMacs in certain computer labs and Macbooks on oldest COWs date from 2006 and 2007 and are unreliable, slow, and obsolete. They will be replaced with a mixture of iMacs, MacBooks, and Chromebooks. Tech Department may choose to purchase several Chromebooks in place of each MacBook in some instances (for the same cost).
- District has run out of MacBooks to issue to new hires due to expansion of staff. This purchase will replenish the stock of laptops for checking out to teachers and staff.
- $**20,000** estimated cost for 7 CAD workstations for 3D printing

iPads : new 9th Grade Foundations in Science program requires 120 iPads on carts

- $**90,000** for 120 iPads
- $**54,000** for carts, charging stations, peripherals (for district wide iPad implementation, not just 9th Grade Science)
- This would bring total district expenditures to date to just about $ **1.0 million** since 2012, about 2/3 of the way through the Roadmap estimate of $1.5 million

Oak Park Unified School District
Board Meeting, June 24, 2014

TECHNOLOGY ROAD MAP PROGRESS REPORT AND AUTHORIZATION TO PROCEED WITH SUMMER 2014 PROJECTS

Requested authorization for Summer 2014 technology purchases per the September 2013 Technology Expenditures Roadmap, to be funded from Measure C6
Updated 6/19/2014 by Enoch Kwok, Director, Educational Technology and Information Systems

Description	Qty	Estimated Total Cost	Project	Purpose
Servers	2	$ 50,000	Servers/Network	Network upgrade for more robust Active Directory network provisioning/storage
Network Switches	2	$ 12,000	Network	IDF for OPIS/OPHS relocatables
iPad Carts (36 devices)	12	$ 24,000	iPads	Charging and storage for mobile iPad Learning Carts
iPad Charging Stations (10 devices)	24	$ 12,000	iPads	Charging and storage for iPad Learning Centers
iPads	120	$ 90,000	iPads	iPads for 9th grade Foundations in Science iPad learning carts
iPad Cases	400	$ 18,000	iPads	Cases for iPads
Computers (Desktops & Laptops)	140	$ 224,000	21St CC	Refresh of oldest computers circa 2006 & 2007, additional laptops (increased staff)
New SMARTboards	21	$ 99,850	21st CC	Upgrading remaining classrooms in district to 21st CC status
SMARTboard projector upgrades	25	$ 48,750	21st CC	1st gen SMARTprojectors are 8 years old and failing at increasing rate
CAD Workstations (3D Printing)	7	$ 20,000	OPHS Career Tech	Workstation class desktop computers (7) for AutoCAD/SolidWorks for 3D Printer
Estimated Total		**$ 598,600**		