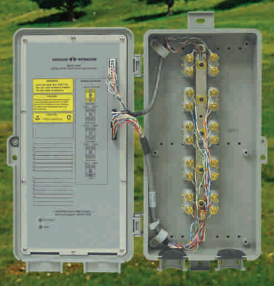
CONKLIN INTRACOM

Deliver ADSL Over 100 kft with *Flex Access™ 9000*

Now, They CAN Have ADSL Service!



FlexAccess 9000™ System Product Overview

SYSTEM OVERVIEW

Enabling deployment of ADSL, ADSL+POTS, or POTS circuits at over 100 kft from the Central Office, this is a scalable, flexible system, built to maximize utilization of the existing copper backbone and provide broadband services where fiber is not available. The FlexAccess 9000 System provides longer range using fewer span power pairs than any other available solution. It is the only range extension platform capable of transporting both voice and data services on a single copper pair while requiring no additional DSLAM equipment to provide ADSL service to customers.

This system consists of 4 components: Central Office Terminals, plug in cards, repeaters, and remotes.

CENTRAL OFFICE TERMINALS (COTs)

Available in 19" or 23" widths, these units are 7RU (12.25") tall, 12" deep and have a rackable depth of 7". Each COT has two COM slots, with the remaining slots available for applications. Each application slot functions independently, and can accept any type of application card. Voice and data services are transported from the COT to the span-powered remotes in an eight channel (528 kb/s), twelve channel (784 kb/s), or broadband (1.552 Mb/s) G.shdsl TC-PAM transport mode. Power for the COT comes from a –48 Vdc CO battery.

23" Model 9122
(shown fully populated)
this model can provide up to
160 ADSL or 240 POTS
circuits

19" Model 9121
(shown empty)
this model can provide up to
128 ADSL or 192 POTS
circuits

CARDS

Each COT requires a single Core Controller or Alarm card* to be installed in the COM1 slot. Application cards are available in ±130 or ±190 Vdc and enable the provisioning of ADSL2/2+†, ADSL, ADSL+POTS, or POTS from a corresponding remote in the field.

Core Controller Cards

Description	Model #
Standard	9124

Alarm Cards

Description	Model #
Standard	9123

ADSL Cards

Description	Model #
±190 Vdc	9151
±190 Vdc (2x Wide)	9153
±130 Vdc	9151-L2

ADSL + 8 POTS

Description	Model #
±190 Vdc	9161
±190 Vdc (2x Wide)	9163
±130 Vdc	9161-L2

POTS Cards

Description	Model #
12 POTS ±190 Vdc (v.90)	9132
12 POTS ±190 Vdc (v.34)	9134
12 POTS ±130 Vdc (v.90)	9132-L2
12 POTS ±130 Vdc (v.34)	9134-L2
8 POTS ±190 Vdc (v.90)	9131
8 POTS ±190 Vdc (v.34)	9133
8 POTS ±130 Vdc (v.90)	9131-L2
8 POTS ±130 Vdc (v.34)	9133-L2

REPEATERS

Stand-alone, weatherproof, single, dual or 439/dual 239 type repeaters are available to extend the service range of the FlexAccess 9000 system. The FlexAccess Design Aid Spreadsheet determines the proper placement of any necessary repeaters based on cable gauge, length, and services deployed.

Single Repeater

Description	Model #
±190 Vdc w/ Exp Pwr	9040
±130 Vdc w/ Exp Pwr	9040-L2

Dual Repeater

Description	Model #
±190 Vdc w/ Exp Pwr	9041
±130 Vdc w/ Exp Pwr	9041-L2

439/Dual 239 Repeater

Description	Model #
±130 or ±190 Vdc	9042

REMOTES

A variety of weatherproof or immersible† span powered remotes are available to provide between 4 and 48 ADSL, ADSL+POTS, or POTS circuits to the end user. The remote terminal converts the G.shdsl signal to standard ADSL, ADSL+POTS or POTS signals, enabling the use of industry standard ADSL CPEs.

ADSL Remote

Description	Model #
8 ADSL	9300
4 ADSL	9301

ADSL + POTS

Description	Model #
4 ADSL+8 POTS	9400-L3

POTS Remote

Description	Model #
12 POTS	9262
12 POTS w/ Drop+	9262-L3
8 POTS	9281
8 POTS w/ Drop+	9281-L3
4 POTS	9241

24/48 Port Remote†

Description	Model #
48 POTS/24 ADSL+POTS Cabinet	9501
in 24 ADSL+POTS mode: requires three 8 ADSL RT Card	9530
plus two 12 POTS RT Card	9562-L3
in 48 POTS mode: requires four 12 POTS RT Card	9562-L3
48 ADSL Cabinet	9501-L1
in 48 ADSL mode: requires six 8 ADSL RT Card	9530

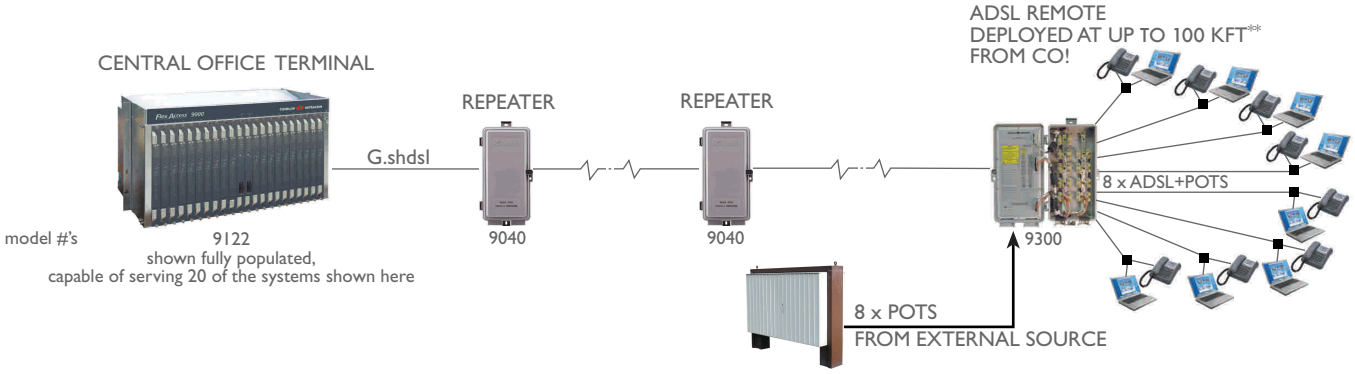
*COTs with one or more ADSL card installed must use a Core Controller card, Alarm cards may be used in COTs with only POTS cards installed

†Coming Soon

SYSTEM APPLICATIONS

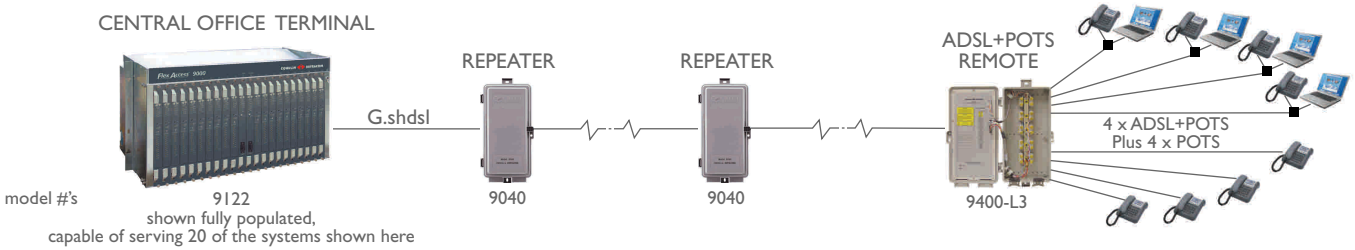
ADSL RANGE EXTENSION & PAIR GAIN

The FlexAccess 9000 system enables customers who have either been denied service or are experiencing slow speeds due to the quality of their loop or their distance from the Central Office or DLC, to receive high speed ADSL. It is also a cost effective alternative to deploying high density ADSL solutions in areas where new demand can be satisfied by up to 48 additional circuits. In such cases, the FlexAccess 9000 Remote Terminal providing ADSL service is deployed at the site of an existing Cross-Connect, DLC, NGDLC, ONU, existing C8000+4 or other Small Digital Loop Carrier (SDLC) ST. It may be attached to the larger enclosure, or mounted next to the existing device on an adjacent pole. Repeaters enable these Remotes to be placed over 100kft from the COT. A single copper pair connects the COT shelf with the ADSL Remote, and express power pairs may be added as needed to extend service range. The ADSL Remote is spliced into the existing POTS lines, acting as a span powered DSLAM with internal splitters to provide the resulting ADSL+POTS circuits that are delivered to the end user. The application displayed below is an 8 port deployment. The 24/48 Port Remote cabinet may be used for sites requiring up to 48 ports.



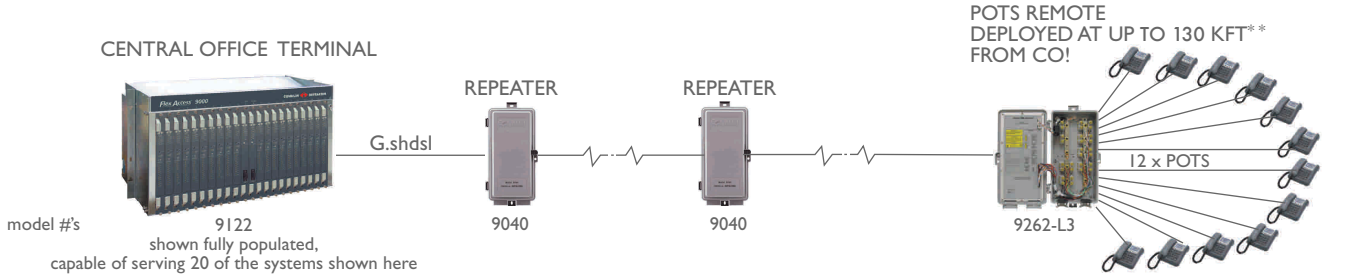
ADSL+POTS RANGE EXTENSION & PAIR GAIN

For sites where both ADSL and POTS capacity are lacking, the FlexAccess 9000 system provides a solution that is more cost effective than NGDLC or BBDLC deployment for lower density applications. This application provides feeder and distribution relief by providing multiple ADSL and voice channels on a single copper pair. Up to 8 POTS lines are connected to the section of the COT backplane corresponding to the application card being installed. Within the ADSL+POTS card, the POTS lines are merged with the data traffic from the Core Controller Card. The resulting circuits are then transmitted through the backplane to the Remote in the field. The application illustrated below is for 4 ADSL+POTS circuits and 4 POTS only circuits. For increased density of up to 24 ADSL+POTS, the 24/48 Port Remote cabinet should be used.



POTS RANGE EXTENSION & PAIR GAIN

This application provides 8:1 or 12:1 POTS pair gain to distances up to 160 kft and 130 kft respectively. It can be implemented either for feeder/distribution relief or as a span powered, cost effective solution for serving small groups of customers. The diagram below illustrates a 12 POTS remote deployment. As an alternative, four POTS may be added at an intermediate location using the model 9241 4 POTS Remote, followed by a model 9281 8 POTS Remote. The 24/48 Port Remote cabinet may be used for sites requiring up to 48 POTS.



** Dependent on OSP physical characteristics

SYSTEM SUPPORT

Beginning with system design, moving through installation, provisioning, and ending with system monitoring & operation, it is our goal to provide customers with the least time-consuming experience possible from start to finish. We provide a number of tools to make this a reality:

DESIGN AID SPREADSHEET

A required tool for configuring equipment to suit any application, the design aid spreadsheet is a Microsoft Excel® worksheet to aid users in the circuit design process. The worksheet uses input fields for cable gauge, length, and services required, to automatically evaluate repeater spacing and span power, and generate an equipment list for simplified ordering. It is available free of charge and can be downloaded at any time from the secure portion of our website **http://www.conklin-intracom.com.**

DSL PAIR QUALIFICATION GUIDE

After the circuit has been designed, use our DSL Pair Qualification Guide to confirm the quality of the cable pair used for the G.shdsl transport between the CO and the ST. This handy checklist gives customers a step-by-step approach for validating the quality of the cable pair. By taking the guesswork out of this phase of the installation process, the remaining steps in system deployment are simplified and expedited.

SOFTWARE

The FlexAccess 9000 System may be provisioned locally via a Command Line Interface, and locally or remotely via the FlexCraft Craft Interface Software. For POTS only systems, C-link+ is available free of charge from our secure website. This system is also designed to be fully supported by our BBMS Element Management System.

CUSTOMER SUPPORT

Our customer support staff are available to help with application or circuit design questions by calling toll-free 800-877-5228. Regional sales and support personnel are available to provide additional on-site assistance if required. Direct access to the latest installation procedures, design aid spreadsheets, and maintenance software are available online at our website **http://www.conklin-intracom.com**.

AVAILABLE SYSTEM COMPONENTS

COTs	Our Model #	CLEI CODE
19" Central Office Terminal	9121	VAM6A00ARA
23" Central Office Terminal	9122	VAM6B00ARA
CARDS		
Alarm Card	9123	VAC4GE0BAA
COT Core Controller Card	9124	VAC4HG0BAA
ADSL Range Extension ±190 Vdc	9151	VAL4U50FAA
ADSL Range Ex ±190 Vdc, 2x Wide	9153	VAL4U53FAA
ADSL Range Extension ±130 Vdc	9151-L2	VAL4U60FAA
ADSL+8 POTS ±190 Vdc	9161	VAL4V3VFAA
ADSL+8 POTS ±190 Vdc, 2x Wide	9163	VAL4V34FAA
ADSL+8 POTS ±130 Vdc	9161-L2	VAL4V3WFAA
12 POTS ±130 Vdc, v.34	9134-L2	VAL4T4KFAA
12 POTS ±130 Vdc, v.90	9132-L2	VAL4T4UFAA
12 POTS ±190 Vdc, v.34	9134	VAL4T4JFAA
12 POTS ±190 Vdc, v.90	9132	VAL4T4SFAA
8 POTS ±130 Vdc, v.34	9133-L2	VAL4T3KFAA
8 POTS ±130 Vdc, v.90	9131-L2	VAL4T3UFAA
8 POTS ±190 Vdc, v.34	9133	VAL4T3JFAA
8 POTS ±190 Vdc, v.90	9131	VAL4T3SFAA

REPEATERS	Our Model #	CLEI CODE
Single, ±190 Vdc, w/ Express Power	9040	VAR1RLUFAA
Single, ±130 Vdc, w/ Express Power	9040-L2	VAR1RLVFAA
Dual, ±190 Vdc, w/ Express Power	9041	VAR1SLUFAA
Dual, ±130 Vdc, w/ Express Power	9041-L2	VAR1SLVFAA
439/ Dual 239 Type Module	9042	VARPCCCDAA
SUBSCRTIBER TERMINALS & REMOTE TERMINALS		
8 ADSL	9300	VAR1UR0FAA
4 ADSL	9301	VAR1US0FAA
4 ADSL + 8 POTS	9400-L3	VAR1VT0FAA
12 POTS	9262	VAR1TNWFAA
12 POTS w/ Extended Drop	9262-L3	VAR1TNXFAA
8 POTS	9281	VAR1TPWFAA
8 POTS w/ Extended Drop	9281-L3	VAR1TPXFAA
4 POTS	9241	VAR1TM0FAA
24 ADSL+POTS/48 POTS Cabinet	9501	
48 ADSL Cabinet	9501-L1	
8 ADSL RT Card	9530	
12 POTS RT Card	9562-L3	
SOFTWARE		
Design Aid Spreadsheet v.2.04U	9101U	
FlexCraft Software v.2.0.0 Local	9000CI	
FlexCraft Software v.2.0.0 Remote	9000CIR	

9000AO 04.15.04

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11360 Technology Circle • Duluth • Georgia • 30097 • phone: 770-295-2500, toll-free 800-877-5228 • fax: 770-295-2600