

## Special Service Circuit Descriptions

<b>Paging</b>	This is an unswitched analog line dedicated to audio broadcast paging.
<b>FX and Coin</b>	Foreign eXchange (FX) circuits allow a customer in one exchange to have a phone number from a distant exchange via a dedicated trunk circuit. For example, a business in Crossville, TN does a lot of business with customers that are in the Knoxville, TN calling area. Customers in the Knoxville calling area can call into the somewhat remote business in Crossville without long distance charges. Conversely, the Crossville business can make calls out to the broader Knoxville calling area without concern for additional long distance charges (beyond the monthly FX circuit charge, which can be a substantial cost). Coin circuits as you might expect are used for Pay Station phone service.
<b>Miscellaneous and Alarm</b>	Usually a dry loop to provide a copper wire circuit to convey the closure of relay contacts associated with an alarm or other monitored condition.
<b>Copper Only Data</b>	Short haul data circuits not requiring ORF-ICN provided active electronic circuitry for transmission of the digital signal.
<b>Designed Data</b>	Any two or four wire, balanced, tested copper circuit capable of providing a signal path for a variety of services. Other categories listed here provide more specific descriptions of various data services available. "Designed Data Circuits" is a broad category. Use this when the other categories don't apply well to the type of service involved.
<b>HI CAPs</b>	High capacity circuits for our purposes are generally T1 circuits. T1 may be referred to by the Digital Signal data rate that it carries, DS-1. DS-1 has a bandwidth of 1.544 megahertz. This will accommodate 24 voice frequency channels. T1 circuits are also often used to transport pure data between sites. Higher data rates are available.
<b>Low-Speed Digital</b>	Also referred to as DS0 (DS zero) circuits. These circuits provide digital data service at rates of 64,000 bits per second. This is the data transmission rate of an individual digitized voice circuit. (The lower rates, or subrates are referred to as DS0-A or DS0-B and are of little use these days.)
<b>ADSL Asymmetric Digital Subscriber Line</b>	Asymmetric Digital Subscriber Line service is designed to offer cost effective high speed data services for small office applications. The data transfer is asymmetrical in that the downstream bit rate is different from the upstream rate. As it is implemented for use here at the Oak Ridge operations, the data rates are <u>up to</u> 8,024 Kbps receiving (downstream) and <u>up to</u> 864 Kbps transmitting (upstream). This is a rate adaptive system meaning that various factors could limit the maximum rates. However, even somewhat reduced rates would be very robust in comparison to conventional services. Coupled to a basic hub, this system will serve small office environment LANs well. Many users could be "hubbed" together on such a network but it must be noted that more users will result in higher traffic, thereby degrading overall system performance. Discussion of the type and quantity of expected traffic will help determine the maximum number of users (subscribers) that should be placed on a given system.
<b>Primary Rate ISDN</b>	Primary Rate ISDN (PRI) service is an offshoot of the Integrated Services Digital Network (ISDN) standard. This setup allows up to 23 voice (B) channels and uses

	<p>the number 24 (D) channel for supervisory signaling with the Central Office. This service is particularly useful where the full bandwidth of a T1 line might not be used. PRI channels may be added as needed, resulting in lower cost verses paying for full T1. (T1 yields 24 voice channels with no channel lost to supervisory overhead.)</p>
<b>Radio</b>	<p>This is an unswitched analog line dedicated to providing a connection between a broadcasting office and the actual radio transmitter/receiver site.</p>
<b>Ringdown</b>	<p>Ring Down circuits do not go through the Central Office switch as a normal phone circuit would. Instead, when one of the phones in the circuit is taken off hook, special circuitry detects this and causes the other phone(s) to ring. When another phone on the circuit goes off hook, the ringing current is removed and talk battery is applied so that a conversation can take place. These circuits generally consist of two phones, however more than two can be bridged together for multipoint ring down requirements.</p> <p>Switched Ringdown service is available such that a POTS line is programmed into the Central Office switch to ring any other phone by automatically dialing that other phone. This is initiated simply by lifting the handset off of the switchhook. Instead of providing dial tone, the called phone is dialed up immediately, then either a ringback tone or busy signal should be heard. This is suitable for non-critical ringdown service. In the very unlikely event of a switch failure, switched ringdown will also fail.</p>
<b>Fiber Optic</b>	<p>In order to track usage of the DOE owned fiber optic plant in the telephone management system, requests for use of this fiber plant must be issued to ORFICN. This allows for inventory of fibers in use and attachment of charges for that use. Requests for service over these facilities should include the fiber count (identifier) that the customer intends to use. Otherwise, fibers will be assigned at the discretion of the Special Service Manager and reported back to the customer. Include LM circuit names so that they can be committed to the circuit record in the telephone management system. ORFICN will provide cross-connects within the backbone fiber plant and a fiber jumper to run to your equipment. <b>IMPORTANT:</b> In the comments field, include the length of jumper and the type of connector required to connect with your equipment.</p>