

The logo for Etisalcom, featuring the company name in a stylized, orange, outlined font. The letters are bold and have a slight shadow effect. A small orange circle is positioned above the 'm'. The logo is enclosed in a thin, double-lined rectangular border.

Etisalcom^o

Data Services Portfolio

Carrier Relations &
Wholesale Department

A decorative graphic in the bottom right corner consisting of several overlapping, thin, light gray circles of varying sizes, creating a floral or abstract pattern.

Local
Access
Services

- eNET
- eWAN
- Microwave
- National MPLS
- Local Leased Circuits

Extended
Access
Services

- IP Transit
- International MPLS
- International Private Leased Circuit

Local Access

- eNET

Businesses with multiple users and a high utilization of the Internet prefer to have always "on" access to the Internet. Our Business Broadband internet service (eNET) enables you to avail of the advantages of high speed Internet access, with multiple IPs on a single link to the Internet.

With high-speed access to the Internet, not only will you be able to transfer information at a much higher speed, but you will also keep your telephone lines free. We offer various internet packages from Broadband to ADSL internet service. Business applications can be reliably accessed from your main or remote offices; voice-over-IP applications can be accommodated, thus reducing monthly operating expenditure.

Broadband Package	Threshold	Tariff (USD)
1 Mbps/256 Kbps	10 GB	40
1 Mbps/512 Kbps	Unlimited	66
2 Mbps/512 Kbps	Unlimited	130
4 Mbps/512 Kbps	Unlimited	209
6 Mbps/512 Kbps	Unlimited	288
8 Mbps/512 Kbps	Unlimited	394
10 Mbps/512 Kbps	Unlimited	526
16 Mbps/512 Kbps	Unlimited	659

TABLE 1 eNET TARIFFS

Local Access

- eWAN

eWAN is Etisalcom's latest connectivity solution to corporate clients. eWAN is a cost-effective, secure, scalable and specially-tailored connectivity solution. eWAN enables point-to-multipoint virtual WAN connectivity over a number of highly reliable connectivity mediums.

eWAN offers a cost effective alternative solution to national MPLS clouds and point-to-multipoint microwave connectivity. eWAN is ideal for connecting multiple sites with low bandwidth requirement.

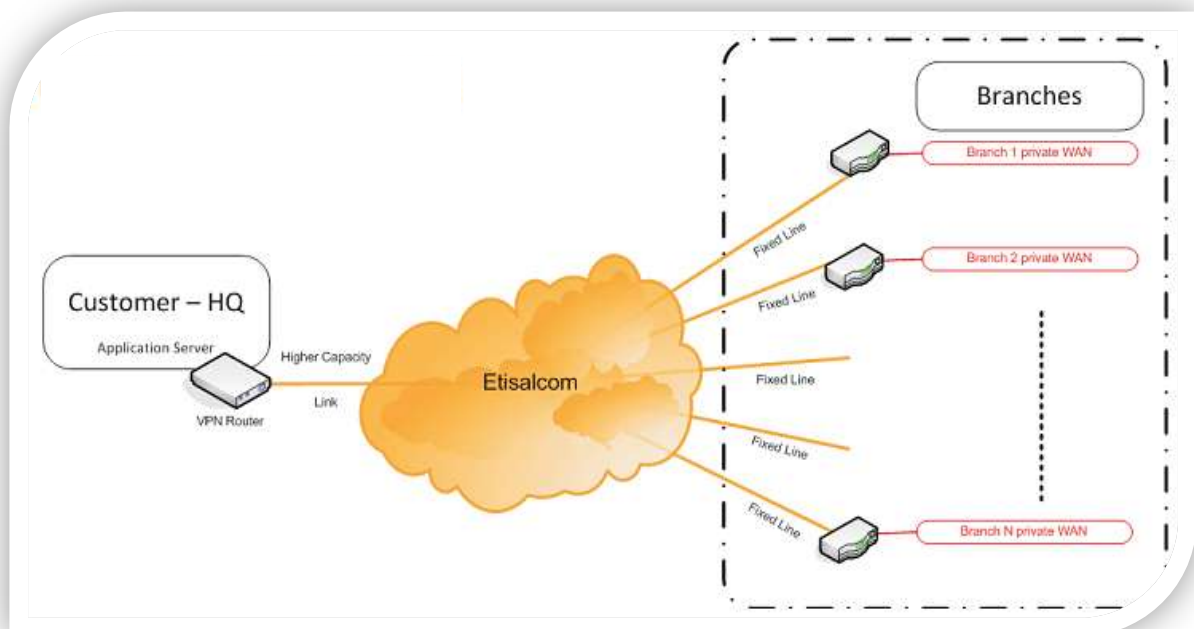


FIGURE 1 eWAN

Local Access

- Microwave

Etisalcom microwave connectivity is a wireless dedicated secure point-to-point and point-to-multipoint connection. Etisalcom has the right solution in place for frequencies over free band and over licensed frequency.

Our wireless transport solution for private networks enable efficient, self-contained networking, without relying on leased circuits or fibre and without spending huge amounts on recurring operational costs.

Our microwave radios support voice, video and high-speed native Ethernet data for any size business agency or organization.

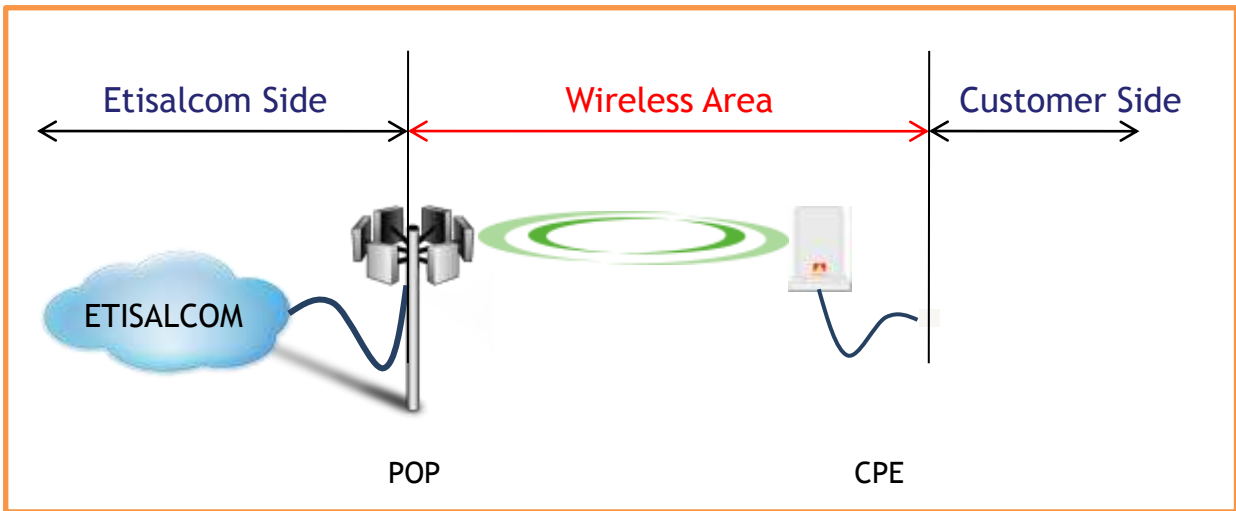


FIGURE 2 ETISALCOM MICROWAVE

Local Access

• National MPLS

Our MPLS will interconnect your various sites and remote workers and create a single enterprise-wide communication network. This network will carry your voice, data and multimedia applications.

Network traffic can be classified into different Classes-of-Service (CoS), each with its own level of priority. This allows the network to distinguish between delay sensitive traffic such as voice, video, voice over IP and multimedia applications. As well as none delay sensitive data, such as email and web browsing.

Etisalcom has 4 Classes of Service (CoS) categories, which are:

- **Best Effort (Economy):** Used for normal data traffic with no guarantees.
- **Business (Standard):** Most suitable for premium business applications with packet loss less than 0.5%.
- **Time Critical (Mission Critical):** For multicasts and mission critical interactive application.
- **Real-time (Multimedia):** Used for real-time interactive traffic, have the highest priority and lowest traffic delay.

CoS Parameters:

Three important parameters to be considered for successful Class of Service deployment, which are:

1. Latency:
 - Physical distance, the number of router hops, encryption, and voice/data conversion are the factors leading to latency.
 - The ITU recommends that latency never exceed 300 ms round-trip.
2. Jitter:
 - Results from variable delays in packet delivery.
 - Occurs when voice packets are sent and received with timing variations.
3. Packet Loss:
 - Takes place when packets are dropped.
 - Packet loss should never exceed 1%.

All of those parameters are measurable. Next table represents the CoS parameters within Etisalcom's GCC MPLS cloud:

Parameter	Value	Applicable for
Packet Loss	< 0.1%	Business, Time Critical, & Real-time CoS
One-way Delay (Latency)	< 60 ms	Time Critical & Real-time CoS Only
One-way Jitter	< 10 ms	Real-time CoS Only

All of those values are fully guaranteed under the following conditions:

- Customer will not oversubscribe any purchased class.
- All the values mentioned above are based-on the worst case (There is a cable cut and overload situation); normally measured values are going to be less.
- All parameters are measured as average over whole month (Not individual spikes).

Local Access

- Local Leased Circuit

LLC is a locally managed service offering a communication link between two national locations (point to point) for an end-to-end dedicated connection. It provides national organizations (to communicate and exchange information) with an exclusive and dedicated communication link between their offices. Link speeds offered are from 64Kbps up to 2Mbps.

Two Network Terminating Units (NTU) are installed on each site and they are interconnected via the local copper infrastructure. Each NTU outputs an Ethernet port which is in turn connected to the local router/network.

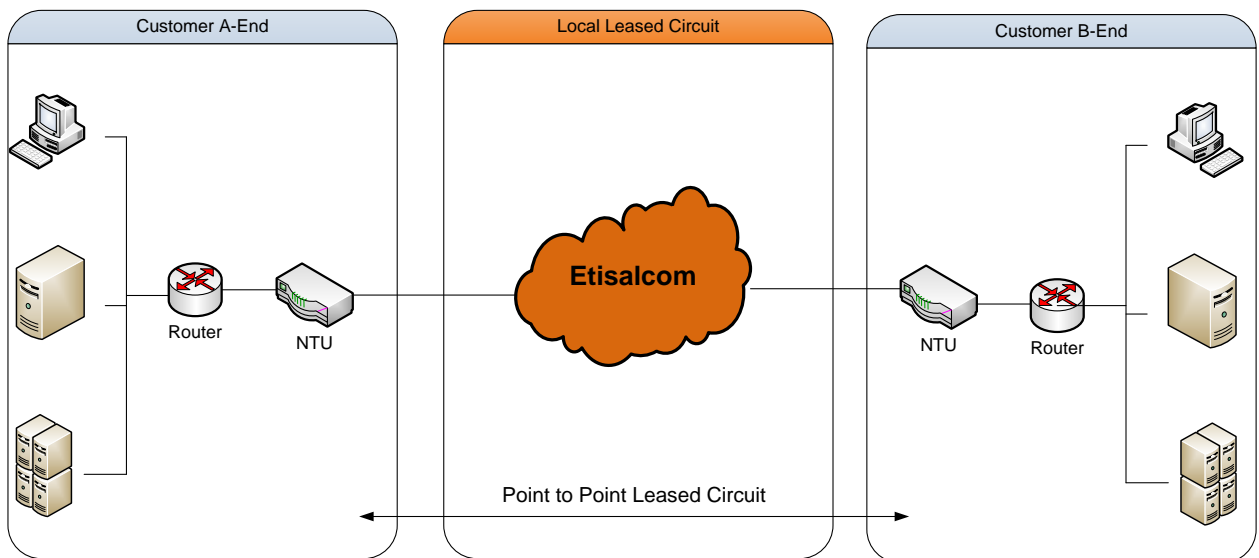


FIGURE 3 LOCAL LEASED CIRCUIT

Extended Access

• IP Transit

With International Carriers and Service Providers in mind, Etisalcom has developed IP Transit Service to enable these Carriers and Service Providers deliver cost-effective regional IP Services.

Keep up with your customers' growing demands for IP Services with our highly scalable IP Transit Service. IP Transit leverages the Etisalcom's highly reliable backbone network. Combined with our *Local Access Services*, Etisalcom enables you extended reachability to your customers.

IP Transit Service includes the following supporting elements:

- **Colocation:** Our colocation services allow you to place your servers and network equipment in our Data Centre. Get the big advantage of high speed connectivity, power redundancy, security, optimal environmental facility, monitoring while retaining complete control over your equipment's administration and maintenance at a very affordable price.
- **Disaster Recovery Site:** Over the years Etisalcom has managed to establish **three** Data Centres within the Kingdom of Bahrain. Each Data Centre covers a vital and business centric district. Hosted equipments may be placed within any of these three sites.
- **Redundancy:** Our interconnected nodes utilize a number of terrestrial and submarine connectivity mediums. This versatile layout setup increases the network's redundancy.
- **24x7 Technical Support:** Etisalcom's Network Operations Center (NOC) is operating 24 Hours a day, 7 Days a week and providing single point of contact for all Etisalcom's customers for service delivery status, billing, information, and fault handling
- **Data Centre Temperature Control:** Etisalcom guarantees the temperature of its Data Centres is kept up to the world's standards in temperature control and monitoring.
- **UPS:** ensures an uninterruptible power supply to your equipment in case of power failure. Our UPS provides up to two hours of backup power supply.
- **Power Generator:** Etisalcom's Data Centre is directly connected to a backup power generator that automatically runs when a power failure occurs. This backup generator goes under regular health check to ensure its availability when needed.

Extended Access

- International MPLS

Our MPLS enables inter-connected nodes to assign a "label" to incoming packets based on their Class of Service (CoS) specification. Your network can run voice communications, video and IT applications separately, creating a faster and smoother pathway and simplifying traffic flow.

You can access intranet, extranet and Internet applications over one connection. Each VPN is totally separate from other VPNs and your network is assured an optimal level of security.

Our coverage spreads across all of the Gulf Region, North Africa, UK and India extending your network's reach to the maximum over highly reliable networks with the minimum overhead costs.



FIGURE 4 INTERNATIONAL MPLS COVERAGE

Extended Access

• International Private Leased Circuit

Etisalcom IPLC provides a dedicated end-to-end link of a defined bandwidth that's always on and charged at a flat rate for unlimited usage. The IPLC runs from **Bahrain** to **any international location**. IPLCs are offered with a range of speeds to suit your requirements and are managed by Etisalcom through a Management Center.

Over the years Etisalcom has established a number of One-Stop-Shop (OSS) agreements with the top Telecom providers in the region. These agreements enable Etisalcom to obtain competitive prices for IPLCs.

Below are some of our regional partners:

- Saudi Arabia: Saudi Telecom Company (STC)
- United Arab Emirates: Etisalat
- Oman: OmanTel
- Etc.

Etisalcom can provide IPLC to your customers in the following countries:

Country	Cable
KSA	SFO
UAE	FOG
Kuwait	FOG
Oman	Falcon
Qatar	FOG

TABLE 2 GCC IPLC

Turkey	Italy
France	Hong Kong
India	Japan
Cyprus	Netherlands
Singapore	Pakistan
Spain	Sweden
USA	Germany
Norway	U.K.
Philippines	Switzerland
Canada	Greece
Algeria	South Africa
Australia	Thailand

Etc.

TABLE 3 PARTIAL IPLC DESTINATIONS LIST



FIGURE 5 REGIONAL MPLS AND IPLC COVERAGE

• Data Services Contact List

Data Services Initial Level Contact

Mohamed Elkanzi

Carrier Relations & Wholesale Officer

Tel : +973 13301818

Mobile : +973 36800818

Fax : +973 17290160

E-mail : m.elkanzi@etisalcom.com

Second Level Contact

Younis Ebrahim

Head of Carrier Relations and Wholesale

Tel : +973 13301710

Mobil : +973 36700710

e

Fax : +973 17290160

E-mail : younis@etisalcom.com