GSM

GSM is an abbreviation of **Global System for Mobile communications**.

World's most of the mobile phone networks rely on **GSM** technology. **GSM** has become the world's fastest growing communications technology of all time and the leading global mobile standard, spanning 214 countries. **GSM** uses a variation of Time Division Multiple Access (TDMA) and is the most widely used of the three digital wireless telephone technologies (TDMA, GSM, and CDMA).

It is a digital cell-based communication service that started in Europe, and has quickly spread throughout most of the world. A notable exception is the US, where CDMA is the dominant standard; however, **GSM** is gaining popularity there. **GSM** is the most supported protocol in smartphones.

GSM was designed for circuit-switched voice communication. Circuitswitched means that fixed bandwidth is reserved for each direction of a phone call for the entire duration of the voice call, whether you are talking or not.

Although originally designed for voice, **GSM** now has a variety of higher bandwidth data services (e.g. **GPRS** and EDGE) available, running on top of the base **GSM** protocol. This allows for faster data transfer, as we will see shortly.

Types of GSM and band used in the frequency spectrum

- GSM 850
- GSM 900
- GSM 1800
- GSM 1900

The number indicates the frequency band, in MHz, that the protocol uses. Mobile phones supporting **GSM 900** and **GSM 1800** will ensure coverage in Europe and many other areas outside of the US, while **GSM 850** and **GSM 1900** are used in the US (mostly **GSM 1900**).

Fortunately, smartphones support multiple bands to ensure as wide a coverage as possible. It's common to have tri-band phones that support **GSM 900**, **GSM 1800** and **GSM 1900** to ensure maximum international coverage – although some still offer separate US models to reduce costs.

A **GSM** phone uses a Subscriber Identification Module (SIM) to gain access to the **GSM** network. A SIM contains all the pertinent information regarding a user's account including the services allowed. It is used to identify the user to the **GSM** network for billing purposes. The user can switch their SIM from one **GSM** phone to another, provided that the phone is not locked either to a specific carrier or to the carrier that the SIM is associated with.

Related Links:

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