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# Summaries and Notices

p. 80...86

## The New Medium and Long-Wave Frequency Plan

H. Probst, Berne

Reporting on the ITU Regional Administrative LS-MS Broadcasting Conference, which ended at Geneva last November, the author outlines its aims and working basis and deals with the problem of day and night service. Having explained Switzerland's position, he discusses some of the results achieved and the effects of the new frequency plan.

p. 87...92

## Multiple Access in Satellite Communication

C. Bremenson, Levallois-Perret

Having reviewed the main characteristics of satellite communication systems, the author describes frequency division and time division, the two chief methods used for signal transmission between satellite and earth station. He also deals with frequency reutilization techniques combining both methods. The two systems are compared with regard to earth station design and telephone traffic transmitted. Special emphasis is placed on frequency-division multiple access, the most commonly used method.

p. 93...99

## Development of a Measuring Set for Non-Linear Distortion with Variable Signal Voltage

M. Schneider, Berne

The k-factor is one of the means by which non-linear distortion can be expressed. However, it is often difficult to measure on transmission channels with heavy fading and a low S/N ratio. The present article describes a specially developed set producing satisfactory results with level fluctuations up to  $\pm 10$  dB and an S/N ratio as low as 20 dB. This is achieved by first stabilizing the rms value of the signal voltage under examination. The sum of the individually filtered harmonics, which corresponds directly to the k-factor, is then fed to an rms rectifier. Details of the circuitry are given and various sources of error are discussed.

## News Items

### Posts

A new end-of-year record was noted in the **Giro inpayment card business**, with items processed by the PTT Electronic Computing Centre reaching 1.2m on 29 December, 0.8m on 30 December, and 1.3m on 5 January.

Some 900 letters addressed to **Santa Claus** or **Father Christmas** arrived at Swiss post offices last year. Replies were sent to 640 children at home and abroad.

### Telephone

The **demand for telephones** dropped by 19,018 or 9.3 pc last year. **Cancellations** for the period January to October were up by 12,911 or 11.3 pc on 1974 as a result of (1) a decrease in Switzerland's alien population, (2) business recession, and (3) short-time working and unemployment.

**Four direct satellite circuits between Zurich and Mexico** came into operation in December.

In September and October 1975, Swiss subscribers used **ISD facilities** on 91.8 pc of their international calls (44.4 out of 48.3 million chargeable minutes). The increase in self-dialling was 3.1 pc over the same period of 1974.

Last year **telephone main stations** increased by 71,157 to 2,462,009, and the number of **sets** rose by 122,620 to 3,912,971. Applicants on the waiting list dropped by 8,949 to 10,307. Telephone density at the end of December was 38.4 main stations and 61.1 sets per 100 population.

The **telephone/data microwave network** was extended by 10 links, increasing its overall length by 191 to 9,346 km of wideband circuit and by 343,800 to 2,648,500 km of voice channel.

The presentation of **Swiss PTT's new range of telephones** at a recent customers' meeting has shown the following 'popularity rating': wall station, 12 pc; table model, standard grey, 66 pc; brown, 12 pc; orange, 6 pc; cream, 4 pc.

### Telegraph, Telex

Switzerland has opened **telex** service to the **Democratic People's Republic of Korea** (North Korea).

**Telex stations** rose by 1,608 to 22,414 last year. Cancellations were up by 428 on 1974 (597). Telex density at the end of December was 35 per 10,000 population.

**Leased circuits** totalled 1,603 at the end of 1975 (1974: 1,425). Teleprinter channels accounted for 52 pc and voice circuits for 48 pc. **Modems** for data transmission increased by 36 pc to 4,274; of these, 49.4 pc were used on the PSTN and 50.6 pc on leased lines.

### Radio, Television

An additional 16 national **TV translators** came into operation in January.

Some 120 radio and television broadcast circuits were provided for the **8 skiing events in the Bernese Oberland and at Les Diablerets** in January; 100 lines were made available for the **European Figure Skating Championships** in Geneva.

In 1975, **radio broadcast receiving licences** increased by 39,143 (1.9 pc) to 2,075,574, and **television licences** went up by 44,780 (2.6 pc) to 1,759,116. Growth in 1974 had been 33,227 and 86,926 respectively. The number of licences per 1,000 population rose to 324 for radio and 275 for television.

**Wire broadcast receiving licences** remained at some 420,000.

The **microwave network for television** was extended by 33 links, increasing its overall length by 1,327 to 13,537 km of wideband route.

### Miscellaneous

Of 336 **suggestions** put forward by PTT staff last year, 74 have been adopted. They will result in annual net savings of about 170,000 francs.