



INTERNATIONAL TELECOMMUNICATION UNION

**ITU-T**

TELECOMMUNICATION  
STANDARDIZATION SECTOR  
OF ITU

**Q.320**

**SPECIFICATIONS OF SIGNALLING SYSTEM R1  
REGISTER SIGNALLING**

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**SIGNAL CODE FOR REGISTER SIGNALLING**

**ITU-T Recommendation Q.320**

(Extract from the *Blue Book*)

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## NOTES

1 ITU-T Recommendation Q.320 was published in Fascicle VI.4 of the *Blue Book*. This file is an extract from the *Blue Book*. While the presentation and layout of the text might be slightly different from the *Blue Book* version, the contents of the file are identical to the *Blue Book* version and copyright conditions remain unchanged (see below).

2 In this Recommendation, the expression “Administration” is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

## Recommendation Q.320

### 3.1 SIGNAL CODE FOR REGISTER<sup>1</sup> SIGNALLING

#### 3.1.1 General

- 1) Either semi-automatic working (with automatic machine or direct operator access), or automatic working (with automatic machine access) may be used for outgoing traffic. With automatic machine access the incoming address signals are stored in a register until sufficient address information is received to route the call properly, at which time a free circuit may be selected and a connect (seizing) line signal sent. Subsequent to the recognition of a delay-dialling line signal and a start-dialling (proceed-to-send) line signal a KP (start-of-pulsing) signal followed by the address and ST (end-of-pulsing) signals are transmitted. The KP signal, which is nominally 100 ms in duration, prepares the receiving equipment to accept subsequent register signals. The transmission of the KP signal should be delayed by a minimum of 140 ms, but not more than 300 ms, after recognition of the start-dialling line signal.
- 2) Link-by-link register signalling applies.
- 3) Register signalling is in a forward direction only and shall be in accordance with the two-out-of-six multifrequency code shown in Table 3/Q.320. Three of the 15 possible codes are unused in international service and are available for special purposes.
- 4) The receiving equipment must furnish a two-and-two only frequency check on each received signal to ensure its validity.

#### 3.1.2 Sending sequence of register signals

- 1) The sending sequence of address signals conforms to the sequence indicated in Recommendation Q.107. However, for traffic within an integrated world numbering zone (e.g. Zone 1) the language or discriminating digit and country codes may have no application and may not be sent. In Zone 1, the sequence of signals sent from the operator or subscriber is as follows:
  - a) *Semi-automatic working for calls to a subscriber within Zone 1:*
    - i) KP;
    - ii) national (significant) number of the called subscriber;
    - iii) ST.
  - b) *Semi-automatic working for calls to operators within Zone 1:*
    - i) KP;
    - ii) special decimal numbers;<sup>2)</sup>
    - iii) ST.
  - c) *Automatic working for calls to a subscriber within Zone 1:*
    - i) national (significant) number of the called subscriber.

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<sup>1</sup> As used in this Recommendation, the term register includes traditional registers in electromechanical exchanges and also the equivalent receiving device, memory and logic in stored program exchanges.

<sup>2)</sup> The special numbers used to reach operators are by agreement between Administrations.

- 2) The sending sequence of register signals shall conform to Table 3/Q.320, noting the following:
- a) a KP (start-of-pulsing) signal shall precede the sequence of signals in all cases;
  - b) the ST (end-of-pulsing) signal shall follow the sequence of signals in all cases.

TABLE 3/Q.320

**Register signal code of System R1**

Signals	Frequencies (compound) Hz
KP (start-of-pulsing)	1100 + 1700
Digit 1	700 + 900
Digit 2	700 + 1100
Digit 3	900 + 1100
Digit 4	700 + 1300
Digit 5	900 + 1300
Digit 6	1100 + 1300
Digit 7	700 + 1500
Digit 8	900 + 1500
Digit 9	1100 + 1500
Digit 0	1300 + 1500
ST (end-of-pulsing)	1500 + 1700
Spare	700 + 1700
Spare	900 + 1700
Spare	1300 + 1700