SECTION H — ELECTRICITY

H03   ELECTRONIC CIRCUITRY

H03L   AUTOMATIC CONTROL, STARTING, SYNCHRONISATION OR STABILISATION OF GENERATORS OF ELECTRONIC OSCILLATIONS OR PULSES (generation of oscillations H03B) **[3]**

Note(s) [3]

1.   This subclass covers:
- automatic control circuits for generators of electronic oscillations or pulses;
- starting, synchronisation or stabilisation circuits for generators where the type of generator is irrelevant or unspecified.
2.   In this subclass, the following expression is used with the meaning indicated:
- "automatic control" covers only closed loop systems.

1/00   Stabilisation of generator output against variations of physical values, e.g. power supply [3, 2006.01]

1/02   • against variations of temperature only **[3, 2006.01]**

1/04   • • Constructional details for maintaining temperature constant **[3, 2006.01]**

3/00   Starting of generators [3, 2006.01]

5/00   Automatic control of voltage, current, or power [3, 2006.01]

5/02   • of power **[3, 2006.01]**

7/00   Automatic control of frequency or phase; Synchronisation [3, 2006.01]

7/02   • using a frequency discriminator comprising a passive frequency-determining element **[3, 2006.01]**

7/04   • • wherein the frequency-determining element comprises distributed inductance and capacitance **[3, 2006.01]**

7/06   • using a reference signal applied to a frequency- or phase-locked loop **[3, 2006.01]**

7/07   • • using several loops, e.g. for redundant clock signal generation **[5, 2006.01]**

7/08   • • Details of the phase-locked loop **[3, 2006.01]**

7/081   • • • provided with an additional controlled phase shifter **[5, 2006.01]**

7/083   • • • the reference signal being additionally directly applied to the generator **[5, 2006.01]**

7/085   • • • concerning mainly the frequency- or phase-detection arrangement including the filtering or amplification of its output signal (H03L 7/10 takes precedence; circuits for comparing the phase or frequency of two mutually-independent oscillations H03D 13/00) **[5, 2006.01]**

7/087   • • • • using at least two phase detectors or a frequency and phase detector in the loop **[5, 2006.01]**

7/089   • • • • the phase or frequency detector generating up-down pulses (H03L 7/087 takes precedence) **[5, 2006.01]**

7/091   • • • • the phase or frequency detector using a sampling device (H03L 7/087 takes precedence) **[5, 2006.01]**

7/093   • • • • using special filtering or amplification characteristics in the loop (H03L 7/087-H03L 7/091 take precedence) **[5, 2006.01]**

7/095   • • • • using a lock detector (H03L 7/087 takes precedence) **[5, 2006.01]**

7/097   • • • • using a comparator for comparing the voltages obtained from two frequency to voltage converters **[5, 2006.01]**

7/099   • • • concerning mainly the controlled oscillator of the loop **[5, 2006.01]**

7/10   • • • for assuring initial synchronisation or for broadening the capture range **[3, 2006.01]**

7/107   • • • • using a variable transfer function for the loop, e.g. low pass filter having a variable bandwidth **[5, 2006.01]**

7/113   • • • • using frequency discriminator **[5, 2006.01]**

7/12   • • • • using a scanning signal **[3, 2006.01]**

7/14   • • • for assuring constant frequency when supply or correction voltages fail **[3, 2006.01]**

7/16   • • Indirect frequency synthesis, i.e. generating a desired one of a number of predetermined frequencies using a frequency- or phase-locked loop **[3, 2006.01]**

7/18   • • • using a frequency divider or counter in the loop (H03L 7/20, H03L 7/22 take precedence) **[3, 2006.01]**

7/181   • • • • a numerical count result being used for locking the loop, the counter counting during fixed time intervals **[5, 2006.01]**

7/183   • • • • a time difference being used for locking the loop, the counter counting between fixed numbers or the frequency divider dividing by a fixed number **[5, 2006.01]**

7/185   • • • • • using a mixer in the loop (H03L 7/187-H03L 7/195 take precedence) **[5, 2006.01]**

7/187   • • • • • using means for coarse tuning the voltage controlled oscillator of the loop (H03L 7/191-H03L 7/195 take precedence) **[5, 2006.01]**

7/189   • • • • • • comprising a D/A converter for generating a coarse tuning voltage **[5, 2006.01]**

7/191 • • • • • using at least two different signals from the frequency divider or the counter for determining the time difference (H03L 7/193, H03L 7/195 take precedence) **[5, 2006.01]**

7/193 • • • • • the frequency divider/counter comprising a commutable pre-divider, e.g. a two modulus divider **[5, 2006.01]**

7/195 • • • • • in which the counter of the loop counts between two different non zero numbers, e.g. for generating an offset frequency (H03L 7/193 takes precedence) **[5, 2006.01]**

7/197 • • • • a time difference being used for locking the loop, the counter counting between numbers which are variable in time or the frequency divider dividing by a factor variable in time, e.g. for obtaining fractional frequency division **[5, 2006.01]**

7/199 • • • • • with reset of the frequency divider or the counter, e.g. for assuring initial synchronisation **[5, 2006.01]**

7/20 • • • using a harmonic phase-locked loop, i.e. a loop which can be locked to one of a number of harmonically related frequencies applied to it (H03L 7/22 takes precedence) **[3, 2006.01]**

7/22 • • • using more than one loop **[3, 2006.01]**

7/23 • • • • with pulse counters or frequency dividers **[5, 2006.01]**

7/24 • using a reference signal directly applied to the generator **[3, 2006.01]**

7/26 • using energy levels of molecules, atoms, or subatomic particles as a frequency reference **[3, 2006.01]**

9/00 **Automatic control not provided for in other groups of this subclass [2006.01]**