



# INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

## MATERIALS MANAGEMENT DIVISION

Powai, Mumbai- 400 076.

Reference for PR No.1000016409 (RFx No.6100000687)

| Vector Signal Generator Tender Specifications |   |   |
|---|---|---|
| Sr. No.                                       | Parameters                                  | Specifications  |
| <b>A</b>                                      |   |   |
| <b>Frequency</b>                              |   |   |
| 1   | Range                                       | 1 MHz to 30 GHz   |
| 2   | Resolution of setting                       | 0.01 Hz or better   |
| 3   | Resolution of phase offset setting          | 0.1° or better  |
| <b>B</b>                                      |   |   |
| <b>Reference frequency</b>                    |   |   |
| 1   | Aging                                       | $\leq 1 \times 10^{-7}$ /year or better   |
| 2   | Input for external reference frequency      | 10 MHz  |
| 3   | Output for internal reference frequency     | 10 MHz  |
| 4   | Output level                                | $\geq 9$ dBm  |
| <b>C</b>                                      |   |   |
| <b>Level</b>                                  |   |   |
| 1   | Setting range                               | 10 GHz $\leq f \leq$ 30 GHz ,<br>-120 dBm to +11 dBm or higher  |
| 2   | Specified level range at ~ 20 GHz frequency | +15 dBm or higher   |
| 3   | Resolution of setting                       | 0.01 dB (nom.)  |
|   | Accuracy                                    | 5 GHz $\leq f \leq$ 30 GHz ,<br>$\pm 2$ dB for $> 5$ dB level,<br>$\pm 1.5$ dB for $-40$ dB $<$ level $< 5$ dB  |
| <b>D</b>                                      |   |   |
| <b>Spectral purity</b>                        |   |   |
| 1   | Harmonics                                   | At +5 dBm,<br>@ 2 GHz: -30 dBc<br>@ 20 GHz: -45 dBc   |
| 2   | Nonharmonics                                | @ 2 GHz: -38 dBc<br>@ 20 GHz: -42 dBc   |
| 3   | Subharmonics                                | @ 2 GHz: -55 dBc<br>@ 20 GHz: -60 dBc   |
| 4   | SSB phase noise<br>carrier offset: 20 kHz   | At carrier offset= 20 kHz,<br>$\leq 1$ GHz -133 dBc<br>$\leq 2$ GHz -131 dBc<br>$\leq 3.2$ GHz -127 dBc<br>$\leq 10$ GHz -120 dBc<br>$\leq 30$ GHz -110 dBc |
| <b>E</b>                                      |   |   |
| <b>Phase coherence</b>                        |   |   |
| 1   | Input and Output of phase coherent signal   | Feature should be available   |

|                              |                    |  |
|------------------------------|--------------------|--|
| 2                            | Connector type     | SMA or SMP   |
| <b>F</b>                     |                    |  |
| <b>Analog I/Q Modulation</b> |                    |  |
| 1                            | Channels           | Separate I/Q Paths                                   |
| 2                            | Analog I/Q input   | 1 or more  |
| 3                            | Analog I/Q output  | 1 or more  |
| 4                            | Output voltage     | 1 V (Vp) or higher                                   |
| <b>G</b>                     |                    |  |
| <b>General</b>               |                    |  |
| 1                            | Power Supply       | 230V, 50 Hz  |
| 2                            | Remote programming | LAN, GPIB  |
| 3                            | Warranty           | 3 years or more                                      |
| 5                            | Form factor        | Benchtop or modular PXIe-based<br>19" rack mountable |