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**Abstract**

A VB.NET class library has been developed for surface radio refractivity (Ns), reduced-to-sea-level refractivity (No) and modified refractivity (M). The class library contains

thirty functions, seven properties and five powerful methods which are polymorphized with at least seven members each. Using our dynamic class library, an accurate, flexible and windows-based software package was developed and applied to study radio refractivity at four Meteorological stations in Nigeria. Calculated results were compared with other researchers' works and found to be in agreement. Results from our application show that No values range between 306-385 N-Units at Abuja site; 304-378 and 294-395 N-Units respectively at Enugu and Sokoto sites. AkureFUTA site has the highest Ns value while Sokoto has the least value. Other accurate results for all the sites were obtained for Ns and M. Software developers will find our class library useful in their works, and the scientific community will benefit tremendously from the use of our package.

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### Index Terms

Computer Science

Programming Languages

**Key words**

Refractivity  
Reduce to sea-level

Modified Refractivity

Surface

