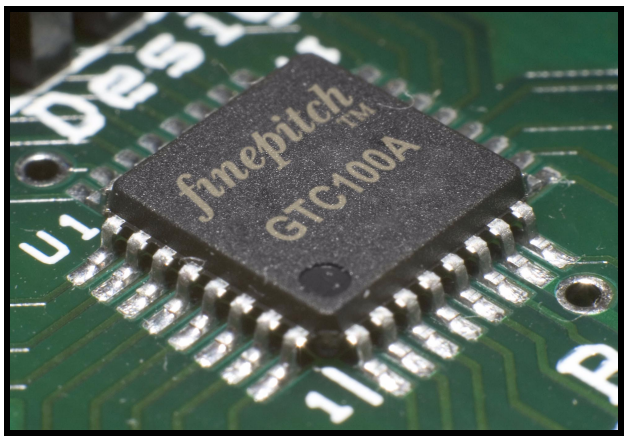
finepitch™

GTC100 Factsheet
Integrated Circuit for Musical Instrument Tuners



finepitch™—a family of single-chip integrated circuit solutions for musical instrument tuning applications. *finepitch*™ digital tuning technology is scalable allowing price and performance to be optimised for different market segments and time-to-market to be substantially reduced.

The new *finepitch*™ **GTC100** integrated circuit provides a single-chip digital solution for electronic or acoustic instrument tuning applications with breakthrough price/performance at a cost of $6·50 per unit (10,000 quantity)*. Requiring only low-cost external components, the *finepitch*™ **GTC100** facilitates production of high-quality, low-cost OEM products.

- **Pitch recognition range of C1 to C6 (NORMAL Mode) and C0 to C5 (BASS Mode); Middle C = C4**
- **Minimum accuracy of 0·8 cents; better than 0·5 cents over most of the tuning range**
- **Extremely fast response**
- **Automatic note detection**
- **MIDI note output via UART**
- **Reference frequency A_{440} adjustable from 437 Hz to 443 Hz in 1 Hz steps**
- **Accurate reference tone output—square wave**
- **Instrument temperaments—Equal tempered, Pythagorean (string), Just Major (wind)**
- **7-segment LED interface for note display**
- **Clip indication via "note sharp" LED**
- **7 LED tuning meter display via direct connection to chip—no glue logic required. Unique display allows visual tuning to better than 1·0 cent accuracy**
- **High noise rejection—useful when tuning acoustic instruments**
- **On-board ADC reduces component count and simplifies design**
- **Low current consumption makes the chip ideal for use in portable applications—typically <6 mA**
- **Small footprint (9 mm × 9 mm) simplifies embedded applications**
- **Pin-compatible with the *finepitch*™ FPE100 to facilitate upgrade to real-time MIDI capability**

Typical applications include:

- Hand-held instrument tuners—using either microphone or electric instrument input (guitar/bass/string/wind *etc.,*)
- Built-in tuners—can be provided as standard on-board equipment *e.g.,* integrated within instrument amplifiers
- Low-light applications—display is entirely LED-based, allowing operation in darkness *e.g.,* on-stage
- Hands-off applications—notes are auto-detected so no user-interaction is required throughout the tuning process

JHC Software Limited and Wired Audio Technology Limited are continually working to improve their products.
If a product in our product range does not exactly fit your needs, a customer-specific customisation service is available to tailor a particular product to your requirements.

*. Budgetary price guideline in USD. Formal quotations are available on request.

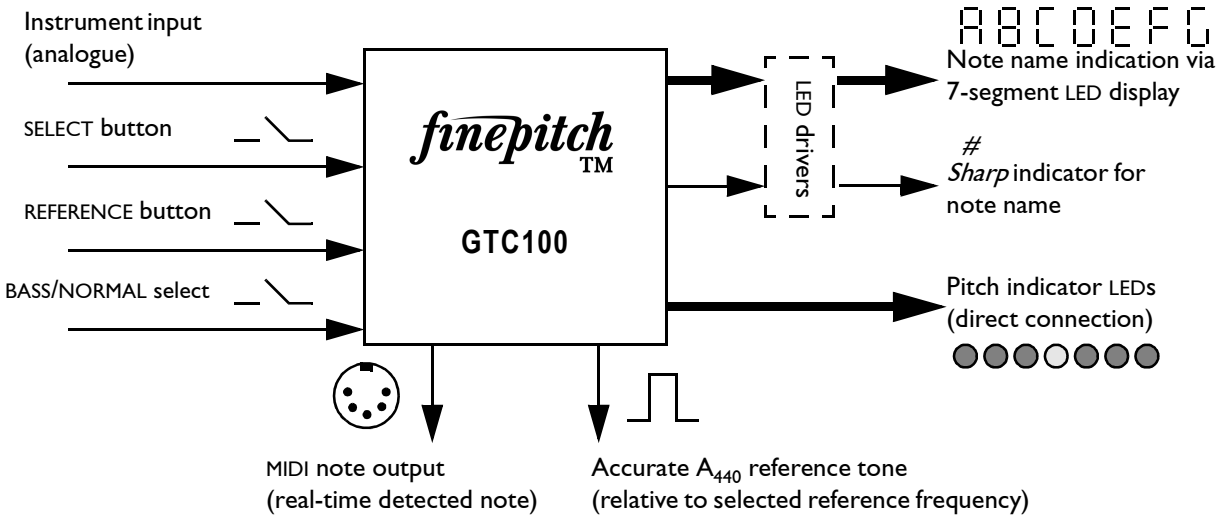


Figure 1: Block diagram of the *finepitch*™ GTC100.

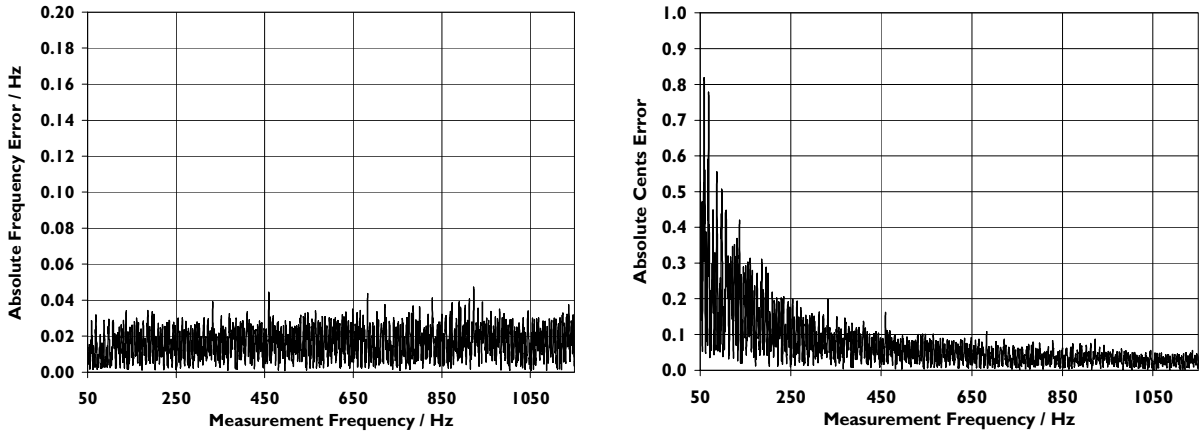


Figure 2: Maximum measurement errors for a sinusoidal input signal, in NORMAL mode. Performance in BASS mode can be determined by halving the frequency values (*i.e.,* 50 Hz becomes 25 Hz).

Distributor Contact Information:

www.tuneric.com—for the latest information on all *finepitch*™ integrated-circuit products.

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