



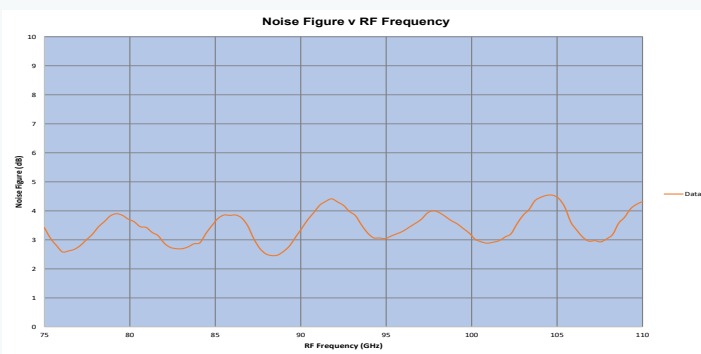
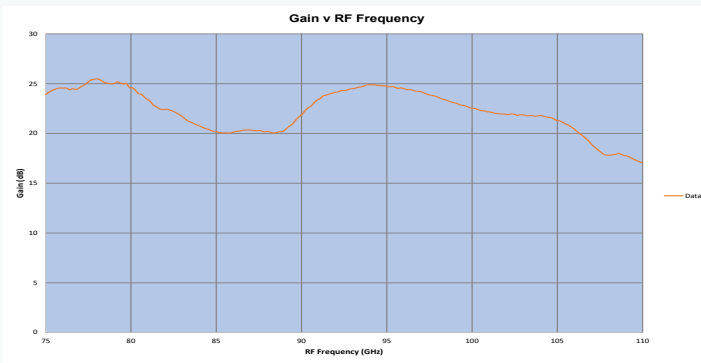
# WR-10 Imaging Front End 75-110 GHz: PMMW-10-0001

Farran's Passive mm-wave (PMMW) imaging provides the unique capability to create high resolution images in low visibility conditions (e.g. through clothing, clouds or fog) and therefore useful for such an applications as concealed weapon detection and airplane landing.

A low attenuation atmospheric window from 80-110GHz (W Band) makes this band an ideal candidate for PMMW systems. Passive imagers operate by detecting naturally emitted thermal (black body) radiation from an object.

### Key Facts:

- Direct detection – no LO signals present
- Low noise figure for high sensitivity
- Integrated video amplification
- Compact and lightweight



### APPLICATIONS

- Airport security screening
- Material composition
- Remote sensing
- Medical
- Metrology
- Medical
- Metal detection in food



### ACCESSORIES

- User manual

"The sensitivity and stability performance matched, but actually exceeded, all our system performance requirements. The resulting system operation and measurements confirmed the exceptional performance of Farran's PMMW."

**Applications Engineer, European Aerospace, Defence and Security Company**



## Product Specification

System Specification	Unit	Min	Typ	Max
Frequency of operation	GHz	75	-	110
Noise Figure	dB	-	4	4.5
Gain	dB	-	25	-
Sensitivity @ +25° C (*Note 1)	K	-	4.0	4.4
Video Output @ +25° C Load (*Note 2)	mV	1,000	-	1,200
Physical Size	-	90 x 28 x13 mm		
Mass	-	85g		
Power Consumption	W	0.25 (5V @ 50mA)		

### Notes:

1. Sensitivity calculated from on  $\Delta T = \frac{T_A + T_N}{\sqrt{\beta\tau}}$

Where  $T_A=295K$ ,  $\beta=35GHz$ ,  $\tau=1\mu s$

2. Differential output – can be customer defined as Farran can adjust the video gain to give required output voltage



### SERVICES AVAILABLE

- Technical Support
- Installation and Setup
- Maintenance
- Application Support
- Hardware Support

For more information on any of our products or services please visit our website: [www.farran.com](http://www.farran.com)



### TECHNICAL SUPPORT

- Technical support provided directly by our knowledgeable and friendly engineers.
- Support for pre- and post-purchase: system configuration, installation and troubleshooting.



### PRODUCT INSIGHTS

- For more product insights register at [www.farran.com/customer](http://www.farran.com/customer)
- Additional information: test data, CAD drawings and 3D models available.



### WARRANTY

- Standard 1 year warranty.

### Specification Definitions

**Nominal value (nom.)** – ensured by design, not tested. **Measured value (min, max)** – expected and warranted product performance obtained from the actual measurements of product sample. **Non-traceable measured value (n. trc. meas.)** – expected product performance obtained from the actual measurements of a product sample by means of using Farran's own equipment and methods. Traceable only to Farran laboratory equipment. **Typical data (typ.)** – value that represents the product specification met over 90% of bandwidth or a mean value. **Specifications without limits** – represent the warranted product performance; with values of no or a negligible deviation from the given value and as such have a secondary impact on the product performance.

