

# MRTECH

## Ready For Tomorrow

**Use Case: Addressing Industry Challenges with Smart Vision Picking Solution (MRTECH CM1000/C2000) and Smart Ring Scanner Integration with Vision Picking Software**

### **1. Industry Challenges**

In the e-commerce and warehouse management industries, operational inefficiencies, high error rates, and costly labor challenges affect profitability and worker satisfaction. Addressing these issues requires innovative technology solutions.

#### **Key Challenges:**

##### **1. High Picking Errors:**

- Manual processes and disjointed systems often result in accuracy rates below 98%, leading to delays, costly returns, and dissatisfied customers.

##### **2. Inefficient Picking Processes:**

- Dependence on handheld scanners and paper-based systems slows operations, with average picking times of 10–12 minutes per order.

##### **3. High Training Costs and Time:**

- Workers require up to two weeks of onboarding to familiarize themselves with systems and warehouse layouts.

##### **4. Worker Fatigue and Safety Issues:**

- The repetitive use of handheld devices and physical strain leads to worker fatigue, higher injury risks, and turnover.



## 2. How MRTECH Vision Picking Solution Addresses These Challenges

The MRTECH Vision Picking Solution combines the **CM1000/C2000 Smart Glasses**, **Smart Ring Scanners**, and an advanced **Vision Picking Software Package** to revolutionize warehouse operations.

### Solution Features and Benefits:

#### 1. Vision Picking Software Package/Platform

- **Centralized Interface for Workflow Management:**

The Vision Picking Software integrates seamlessly with the Warehouse Management System (WMS), providing real-time updates on inventory, order statuses, and worker performance.

- **Customizable Pick Paths:**

The software dynamically adjusts pick routes based on priority orders, worker location, and inventory layout, optimizing efficiency.

- **AI-Driven Anomaly Detection:**

Detects discrepancies in inventory levels and flags potential errors before they occur.

- **Real-Time Feedback:**

Combines visual overlays on smart glasses and tactile feedback from ring scanners to ensure item verification and task completion.

#### 2. Enhanced Picking Accuracy

- **Step-by-Step Visual Guidance:**

The CM1000/C2000 Smart Glasses display precise item locations with augmented reality (AR) overlays, guiding workers directly to the correct products.

- **Dual Verification:**

The Vision Picking Software integrates with the ring scanner to verify item scans instantly, providing visual and tactile feedback for accuracy.

- **Impact:**

Reduces picking errors to **less than 0.2%**, significantly improving order accuracy.

### **3. Improved Operational Efficiency**

- **Hands-Free Workflow:**

Workers can focus on picking without juggling handheld devices, as the Vision Picking Software handles item verification and guidance.

- **Optimized Picking Paths:**

Software-generated routes reduce unnecessary walking, cutting picking times from 10–12 minutes to **5–6 minutes per order**.

- **Impact:**

Increases throughput by **50%**, enabling warehouses to meet demand during peak periods.

### **4. Faster Training and Onboarding**

- **Interactive Training Modules:**

Vision Picking Software includes guided onboarding processes, displayed on smart glasses, reducing the learning curve for new hires.

- **Minimal Training Time:**

Workers can achieve full productivity in **2 days**, down from two weeks, saving **65% on training costs**.

### **5. Enhanced Worker Safety and Satisfaction**

- **Ergonomic Design:**

The lightweight design of the smart glasses and ring scanner reduces strain, while the Vision Picking Software minimizes physical tasks through automation.

- **Worker Empowerment:**

Instant feedback and intuitive systems foster confidence, improving morale and reducing turnover.

- **Impact:**

Safer environments and happier workers contribute to sustained productivity.

## **6. Real-Time Operational Insights**

- **Comprehensive Analytics:**

Vision Picking Software collects data from all connected devices, offering insights into order accuracy, worker productivity, and operational bottlenecks.

- **Actionable Intelligence:**

Managers can use the data for continuous improvement and decision-making.

- **Impact:**

Long-term cost savings and process optimization enhance scalability.

## **3. Infrastructure Requirements**

To implement the MRTECH Vision Picking Solution effectively, the following infrastructure is necessary:

### **1. IT and System Integration:**

- **WMS Integration:** The Vision Picking Software must integrate seamlessly with existing warehouse management systems for real-time order processing and inventory updates.
- **Cloud or On-Premise Hosting:** Choose a hosting option based on scalability needs and data security preferences.

### **2. Network Connectivity:**

- **Reliable Wi-Fi or 5G Coverage:** Ensure consistent communication between the Vision Picking Software, smart glasses, and ring scanners.

### **3. Hardware Requirements:**

- **MRTECH CM1000/C2000 Smart Glasses**
- **Smart Ring Scanners**
- **Charging Stations**

### **4. Software Configuration:**

- **Vision Picking Software Package:** Must be customized to match warehouse layouts, inventory structures, and operational goals.

#### **5. Data Security Protocols:**

- **Encryption and Regular Backups:** Protect sensitive operational and inventory data while ensuring business continuity.

### **4. Expected Benefits of the Vision Picking Solution**

#### **1. Enhanced Accuracy:**

- Achieves an accuracy rate of **99.9%**, significantly reducing returns and boosting customer satisfaction.

#### **2. Increased Efficiency:**

- Reduces picking times per order by **50%**, allowing warehouses to scale operations during high-demand periods.

#### **3. Lower Training Costs:**

- Cuts onboarding costs by **65%**, enabling rapid adaptation to scaling needs.

#### **4. Worker Safety and Satisfaction:**

- Minimizes fatigue and improves morale, reducing turnover and absenteeism.

#### **5. Actionable Insights:**

- Provides data-driven operational improvements for long-term efficiency and cost savings.

### **5. Conclusion**

The MRTECH Vision Picking Solution, integrating CM1000/C2000 Smart Glasses, Smart Ring Scanners, and the Vision Picking Software Package, is a comprehensive system designed to meet the challenges of modern warehouse and e-commerce operations. This innovative solution delivers unmatched accuracy, efficiency, and worker empowerment, setting new standards in logistics and fulfillment.

**MRTECH: Transforming Warehouse Operations with Visionary Technology.**